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THE WORK AT THE PONDVILLE HOSPITAL*

BY ERNEST M. DALAND, M.D., F.A.C.S.†

THE reason that you are meeting at Pondville is because there is a close link between the State clinics and the central State Hospital. We appreciate the co-öperation that we have had from the state clinics and the social workers in the state clinics who help us in following up our cases and referring patients back to us. A great number of the patients that we are getting here are now coming from the state clinics.

It may be of interest to you to hear the figures for the first year ending July 1. During that year we saw a total of 675 patients at the hospital, 425 were seen in the house, the others in the out-patient,—a total of 17,000 hospital days. We had 222 operations, 310 radium treatments, 963 x-ray treatments, 1227 x-ray pictures, 120 deaths and 60 autopsies.

I think you are all familiar with the management of the hospital. We have Dr. Jones as Superintendent. We have two surgical residents, men who are graduates of major hospitals and who are actually in charge of the patients. The rest of the medical service is rendered by a visiting staff consisting of three or four men who come twice a week and put in half a day, six or eight men who come on certain definite days, as well as when they are sent for. The work is carried on by the men who are here twice a week, seeing the patients, sorting them out and referring them to our specialists for further care. We have been very fortunate in the superintendent of nurses that we have and in the social worker, also in the head nurses we have in charge of our wards. It has been a very difficult position for them. We may think it is difficult as doctors to see patients twice a week, but the nurses have to see them all the time, day in and day out. Unless we had many cases that were relieved and sent out, it would be an impossible situation in which to place nurses.

They have asked me to tell you something about what we are doing here, about the type of patients that we have and the type of patients that we want. The type of patients that we *want* are the early, favorable, operable, curable patients!

The patients that we *get* are divided into three classes. The first class is the type that I mentioned. The second class is the type of patients for whom something can be done in the line of radical operations or combinations of operations with x-ray or radium. The third type are patients that are obviously hopeless, terminal patients. For these something can be done in the line of relief from pain and prolonging of life, but these are not the favorable cases and not the cases that we like to see come in.

Now let us go back a moment to cancer itself. All people who have cancer do not belong in the same class. The person with a skin cancer should not be mentioned in the same breath with the person who has a breast cancer. Skin cancers are malignant and if let go they cause untold suffering. If they are treated early they may be eradicated. In going over figures at the Huntington Hospital we found that of all the patients coming in with cancer of the skin, some of whom were advanced cases, at the end of three years, sixty-seven per cent. were well without disease. In the other thirty-three per cent. there were many far advanced and some neglected cases. There were eighty-four per cent. well of the favorable cases. That should be one hundred per cent. These cancers are seen fairly early because they are on the surface and by proper treatment we should be able to cure every one of these. On the other hand, cancer of the stomach is a very different proposition. Very few of the patients that come to the hospital with cancer of the stomach come early enough to have the diagnosis made in time to do them any good. That is, the cancer may extend from the stomach into the glands of the abdomen for a considerable distance before the patient is aware that there is anything the matter. The condition is so far advanced that practically nothing can be done. There are very few people alive today who are cured of cancer of the stomach. I heard a paper on cancer of the stomach several years ago. The question was asked, "How many surgeons have any cancer of the stomach patients alive three years following operation?" There was only one man who was able to reply that he had such a patient.

On the other hand, cancer in the same organ may vary a great deal in its rapidity of growth and in its degree of malignancy. There are many patients with cancer of the breast alive after eight or ten years with no treatment. We

*This and the papers by Dr. Cabot, Dr. Bigelow and Mr. Kelso were read at Pondville, November 19, 1928. The papers by Dr. Jackson, Dr. Gerber, Dr. Taylor, Dr. Meigs and Dr. Warren were read November 14, 1928.

†For record and address of author see "This Week's Issue," page 149.

were surprised to find that among one hundred patients who had no treatment whatsoever, at the end of five years, twenty-two per cent. were still alive. These people had slow growing cancers of the breast. They did not tend to invade the glands or to go into the lungs until fairly late in the course of the disease. On the other hand, there are some types of breast cancers that kill a patient within one year or less from the time the trouble is noted. There again we have to differentiate different types of cancer.

In the last two or three years a great deal has been done in the microscopic study of cancer of a given organ according to the degrees of malignancy. Now we are able to predict pretty well at the end of an operation whether that patient is going to die in the next year or whether that patient has a good chance of living indefinitely after the operation.

In the early, favorable cases we are able to cure a great many patients. Hardly a week goes by but some one says to me, "Can you really cure some of these people?" "Can cancer be cured at all?" That is something about which we have not educated the people properly. The people who are cured of cancer are not people who are crowing about it. You hear about the people who have been unfortunate enough not to have been cured. That is so in all types of cancer, but in cancer of the breast the number of cures is fairly high.

Let me give you figures: Of all the patients that come into a general hospital with cancer of the breast, at the end of five years we find about 12 to 15 patients out of every one hundred are still alive. There are a few of these too far advanced to be operated upon, some refuse operation, and others will be operated upon and will die very quickly, but at the end of five years, probably twelve to fifteen per cent. will be well. If we pick those cases out a little more carefully, if we take the patients who came before there is any extension of that cancer, we find that instead of twelve or fifteen per cent. we can get seventy per cent. cures at the end of five years. That we consider high. Most of the hospitals will run between sixty and seventy per cent. of the early, favorable cases.

These cancers have got to be taken early enough so that the glands are not involved and they have got to be favorable in that they must be cancers of low or medium malignancy. The highly malignant ones are the cases that fall between the seventy and one hundred per cent. What have we got to work for? We have got to work to raise that twelve per cent. figure to the seventy per cent. figure. That is perfectly possible if every one is educated along the proper lines. That can be accomplished and that is what we have got to set for our goal.

In the same way in cancer of the uterus and in cancer of the cervix, we are able to show ten or twelve per cent. cures at the end of five years. Most of the patients who go along for five years feeling perfectly well can be considered as permanently cured. We say five years, but we find ten years and even eighteen years later some patients coming back with a recurrence. We can not tell patients that they are cured for a great many years. So we qualify it by saying a five year cure. In cancer of the cervix we can now show only about ten per cent., whereas in the favorable cases we are able to show sixty per cent. five year cures.

One difficulty in curing early cancer is the doctor's desire not to mutilate. If some doctors see a patient with a small lump in the breast they think it is too bad to mutilate that woman by removing the breast. They decide that perhaps it is not cancer and it will be well enough to remove the tumor and a little tissue around it. That patient never gets cured. We can not cure by being too sentimental about the mutilation of the patient. The only way to cure them is to size up the extent of the disease and to go after it radically. The non-mutilated patient with cancer is not half as happy as the mutilated patient free from cancer.

Another difficulty lies in the physician not realizing the necessity of acting radically, in treating the condition in the first place. This applies in cancer of the face and cancer anywhere in the body. If one tries to save the patient's face and tries to preserve the features, the chances are that he will not be radical enough to cure the disease, while on the other hand, if he appreciates the possibility of repair of such mutilation he is more likely to go ahead and do a radical operation.

Now the moderately advanced patients that come in here, the second group, are either patients who have neglected things and have gone on too far before consulting a doctor so that very little can be done for them; or they are patients who have had some minor procedure done without getting rid of the disease. Then they are sent down here for more radical treatment. This is the type of patient that some hospital or some physician has had for a time and as things have not been going well, they have advised them to come to an institution where "they are making a specialty of that sort of thing". In fact, that excuse is given in some terminal cases of patients.

These patients know that this is a hospital for the treatment of cancer. They expect something to be done. They may have been told that the previous hospital or doctor can do no more. When that patient comes in he expects that we are super-men, that we can accomplish things that can not be accomplished anywhere else. That makes our responsibility all the greater.

In the first place, we have to give them medication for their pain. We do not take a person's morphine away from him when he comes in. We give them what they need and then go after the source of the pain. In many instances

it is an ulcerating, foul discharging growth which can be cleared up. Then instead of morphine they need aspirin.

We have very few people who are using large amounts of morphine. It was feared that this would become a morphine addict's hospital. That is not the case at all.

As we get ulcerations cleaned up, as we get dirty, rotten teeth taken out, we find that the pain in a person's mouth is considerably decreased and the patient begins to have a different vision of life. We find that some of the glands do not grow quite as rapidly when there is no chronic infection. In some instances the patients who were considered hopeless are thought to have a chance and we operate on them if we think we can prolong their lives. We do not hesitate to operate on a patient if we think that we can prolong his life and reduce his pain for a period of months. These people are not good risks. We are playing with fire.

We have to use all types of anaesthetics according to the type of patients with which we are working. This morning, the first case on which we operated was a man of eighty-six. His first operation was done two weeks ago. Today we removed the glands of the neck with morphine and twilight sleep and novocaine. He slept all through the operation and he will not suffer the effects of having had ether. Tomorrow he will not have any recollection of having had the operation. A patient became angry because his operation had been put off, whereas the operation had already been done under twilight sleep. A man of eighty-six with a cancer that is causing him pain, I believe, should be operated upon if we are not going to give him too much risk from the operation.

On the other hand, there are a certain number of people where we attempt to do a palliative operation. On the more advanced patients we find x-ray treatment in selected cases does reduce pain. We use x-ray of high voltage for the latter type and this treatment is given over a period of several days. Many of the advanced cases can get a great deal of relief by palliative operations. For instance, a person with cancer of the rectum may be made much more comfortable by making an opening above the growth so that the patient is relieved of the obstruction. There are patients who have cancer of the larynx. These patients can be operated upon by putting a tube into the larynx and giving them a good deal of comfort. We had a man die here last week who had been here about twelve months. Twelve months before he came in here he had a tracheotomy performed and a tube put into his larynx. He lived two years without much pain. In another case a tube was put in the stomach and the patient fed liquids for several months. He had an obstruction of the first portion of the stomach and could take nothing by mouth.

Then there are the extremely advanced patients, the terminal patients, that come in one day and die before the next day is over. That is the type of patients that we do not want. They ought to be sorted out and kept where they are. I think it is a crime to send a patient twenty-five miles in an ambulance one day and return the body in a hearse the next day. That has happened probably a dozen times where a patient has died within a day. Twenty minutes in one case.

One thing that can be said about the ways in which you can help us is to see that we get suitable reports from your hospitals when your patients are sent in to us. We have patients coming in who have been studied in hospitals and of whom we know nothing. It takes a week or ten days sometimes to get a report on what has been done for them. It is a waste of time to repeat all the tests and examinations that have been done before.

Considerable has been said as to the type of advertising campaign which should be carried out and the amount of publicity that should be made. I feel very strongly that publicity is a very important thing but I do feel that we do not want to try to scare people; we do not want to create "cancerphobia". I do think that our advertising and publicity ought to be based on facts and conditions as they are, on conditions as they should be. For instance, this goal of raising cancer of the breast cures from fifteen to seventy per cent. should be put out to the public as such, giving facts, giving statistics, and something definite to work for.

I do not believe that we can accomplish much by appealing to sentiment or by trying to create fear. This is a very great problem. I have criticized some things that have been done. I have been asked to offer something better. That I have been unable to do. I do think we have got to stick to facts whatever we do in trying to educate the public.

BREAST CANCER

At this clinic we get very few early, operable breast cancers. We get a few from our own clinic, but very few from the State Clinics. Most of the patients have recurrences or are inoperable. For the primary, operable cases, we believe in a very radical operation. This may be done by using one of two types of incisions—the Halsted or the Rodman—the latter being the one which we like the better. The Rodman incision starts at the mid-clavicle, goes to the latissimus and continues transversely across the axilla. The incision is then carried in the form of an arrow head around the breast. A definite segment of skin between the axilla and the breast is taken out making the arrow head type of incision. We believe that the lymphatics in this skin between the breast and the glands should be removed. The dissection removes the pectoralis major and minor muscles, the con-

tents of the axilla, all the skin over the breast, and the fascia beneath the breast. The fascia is important because lymphatic extension is largely through it. It is sometimes permissible to divide and retract the pectoralis muscle. It is not possible to dissect the upper half of the axilla unless the muscles are divided or removed.

I am speaking in some detail of this operation because practically all the recurrent cases that we see are in patients who have had minor subradical operations. The figures at the Huntington Hospital show that about fifty per cent. are cases where a radical operation was not done in the first place. If a case is operable, then we ought to strive to get an operative result with no local recurrences. No case is operable with any chance of cure if there are glands above the clavicle, if there are lung or bony metastases. If a patient is free from these conditions, and if the axillary glands are not too fixed, all that we can expect to accomplish from a radical operation is removal of the growth locally. If we get recurrences in this region, then the case has not been properly selected or the operation has been inadequate. We cannot prevent metastasis occurring later in the lungs, liver or bones as presumably the metastasis has occurred prior to the operation. I do not mean to say that we never get local recurrences.

All patients coming in here with cancer of the breast, no matter whether the disease is primary, recurrent, or inoperable, have x-rays taken of the spine, both femurs, both humeri, pelvis and the chest. In one case now at the hospital a minor operation had been done before entrance, the breast lifted up and a specimen removed. The pathologist reported cancer and it appeared that this was a suitable case for radical operation. X-ray showed a metastasis in the lumbar spine and for this reason no operation is to be done.

We have been guilty in few cases of doing a simple breast amputation for cancer, but we do it with the idea of removing a sloughing mass. We do not expect a cure but we do expect palliation. After removal of the tumor, deep x-ray is carried out quite vigorously.

There are a certain number of cases of tumors of the breast where no one can make a definite diagnosis. Such cases call for an exploratory operation, being prepared to do a radical operation if necessary. We do not hesitate to explore the tumor either with a knife or by electrosurgery, packing the wound with ten per cent. formaldehyde after the specimen has been removed. The specimen must be examined on the spot by the pathologist and a frozen section made if desirable. The number of cures in cases where this has been done and where the complete operation has been done at the same sitting is as high as in those cases not explored. We deplore the situation where a tumor is removed, the specimen sent to a distant city for pathological examination, and a week or ten days later a second operation is done. Statistics show that these operations are by no means as satisfactory as when immediate operation is done; in fact, the number of successful cases where the delayed second operation is done is exceedingly small.

There are many cases of cancer of the breast that are about to break down and ulcerate where deep x-ray can be used with a great deal of benefit. We do not feel convinced that x-ray is wise as a preoperative measure in all breast operations. Many people are against postoperative treatment. We do not feel that this question is definitely settled. In a recent series studied by Dr. Greenough and myself where the cases were selected from nine different hospitals, the final figures are the same whether or not postoperative treatment was given. Apparently the x-ray did not accomplish anything in this series as far as increasing the number of cures. However, since these cases were treated, there have been definite advances in x-ray therapy. Later study may show benefit from such treatment.

CERTAIN CLINICAL ASPECTS OF THE MALIGNANT LYMPHOMAS

BY HENRY JACKSON, JR., M.D.*

THE medical department in this hospital has been chiefly interested in the leukemias and the malignant lymphomas. Both of these conditions may properly be cared for in a cancer hospital since they are essentially malignant and lead to death in relatively few years. We are at present engaged, in this and associated hospitals, in an extensive laboratory and clinical study of the nature of these diseases in order that we may better understand and more logically treat them, but this evening I shall confine myself to certain of their clinical aspects.

I assume that you are familiar with the classical picture of these diseases and it is to some of their more unfamiliar features that I would very briefly draw your attention.

The full-blown leukemias are easily diagnosed. An enlarged spleen with palpable lymph nodes and a white blood count of many thousands makes the diagnosis easy. The so-called aleukemic leukemias are, however, more difficult to diagnose. In these cases the white count is normal or even low, but the differential count is always abnormal; and unusual, primitive cells invariably occur. It is on these immature cells that the diagnosis rests, together with enlarged

*For record and address of author see "This Week's Issue," page 149.

lymph nodes, spleen and perhaps liver. Even so it is a type of the disease easily missed. Both lymphatic and myelogenous leukemia may occur with constantly low or normal white counts. Either type may, further, become aleukemic, particularly after a minor infection. The lymphatic leukemias are particularly hard to recognize when in the aleukemic phase. An unusually high percentage of mononuclear cells should always arouse suspicion. It is just this class of patient in which a correct and early diagnosis is important; for one does not care to give a bad prognosis in a case which is to get well, nor to pass lightly over an individual who is actually suffering from a fatal disease. In doubtful cases look most carefully at the blood smear. Its abnormalities may give the clue. Unusual cells appearing in the smear of a patient with enlarged nodes and obviously sick should call for a careful study and a guarded prognosis. Infectious mononucleosis, a benign, self limited disease, may cause confusion, but the course of the disease and careful blood studies will clear the diagnosis.

There are in general four types of cases coming in this general leukemia-lymphoblastoma group which are liable to be confusing:

First: Cases which come to the doctor simply because they are "run down". They do not "feel well". There may be no particular symptoms to be elicited even on careful questioning. It is easy here to miss the serious underlying condition. Look, in these cases, for enlarged lymph nodes and abnormal blood and for evidences of increased metabolism which often accompanies such cases. The patient may well have a leukemia or lymphoblastoma. Proper high voltage x-ray treatment will afford the patient several years of a happy and useful life. We cannot prolong their years materially but we can make their allotted years a benefit rather than a handicap.

Second: There is a group of cases which present primarily skin lesions. The group is relatively large. "Scabies" is often imitated, probably because many leukemic skin lesions itch. The characteristic burrows are of course absent. Almost any form of skin lesion may be seen,—herpes simplex, often wide spread; erythema multiforme, eczematoid lesions, nodules of all sorts—all these may indicate an underlying serious disease. All are danger signals. Should the lesions be associated with enlarged lymph nodes the suspicion becomes graver. Beware of obscure skin lesions in the presence of palpable nodes and an abnormal blood.

Third: Acute abdominal crises are not infrequently seen in these cases—pain, elevation of temperature, rapid pulse, tender abdomen, increased white count. The diagnosis may be extremely difficult. These symptoms are presumably brought about by pressure of enlarged nodes on nerves. There may be sciatic pain perhaps with edema of the ankle on the same side. The fact that these cases may and often do run a fever and a high polymorph count adds to the difficulty of diagnosis. An enlarged spleen, large liver, or generalized lymph-adenopathy may make the diagnosis. I have seen six cases in the last year which were either operated or came very near it though really suffering from either leukemia or lymphoblastoma. Morphine and high voltage x-ray will stop the pain. However, it must be remembered that lymphoblastoma cases may have real abdominal emergencies. In a doubtful case it would probably be well to operate first and speculate later.

Finally there are those cases which show neurological symptoms—facial paralysis, sciatic pain, symptoms of cord tumor (as in a case recently operated) and other symptom complexes caused by pressure on nerve trunks by enlarged nodes. The diagnosis may be easy; it may be impossible.

Bear in mind, please, that these cases are rare, but if one has in mind the possibility that such may be leukemias or lymphoblastomas one may make the correct diagnosis and hence be able to give proper treatment.

Finally—it is not my experience that biopsies are dangerous *if properly done.* Do not cut into a tumor mass if it can be avoided. I have never yet seen the clean excision of an isolated node cause trouble. And I am sure that biopsy is very often the only way to make a correct diagnosis and hence the only way to plan for proper treatment. The more cases I see, the more sure I am of this. A poorly done biopsy is a snare and a delusion. A well planned and carefully executed biopsy is of the greatest value.

THE USE OF RADIUM IN THE TREATMENT OF CANCER

BY I. GERBER, M.D.*

I SHALL not use up any of the brief period of time at my disposal in talking about the physics of radium or its action on cancer cells, as I assume you are familiar with this. In fact many of you, I know, are already using radium in your clinics. I wish to speak more particularly about the way in which we use our radium here at Pondville.

As you probably know, we have a gram of radium altogether in this institution. All but 60 mg. is kept in solution in the radium emanation plant in the basement, which many of you have seen and which will be open for inspection for those who are interested. The remain-

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der we have in a small amount of radium element, about 60 mg. in all. 10 mg. is contained in a full strength plaque which we use in our skin work. The remaining 50 mg. are divided into four steel needles, each containing 12½ mg. These needles are of the so-called Lee type, which have a long metal shank for implantation, which is detachable. This type of needle is very useful for implantation in deep-seated masses, particularly in the prostate.

The 940 mgs. which remain are kept in solution and the emanation from this is pumped off periodically by Mr. Hudson, one of Prof. Duane's assistants. As you are no doubt aware this radium emanation has the same therapeutic efficiency as the radium element but its activity falls off very rapidly. In fact half of it is gone in slightly less than four days.

As I have said before, we are using our small plaque on some skin diseases such as senile keratosis, warts, and very small superficial epitheliomata. For the more extensive skin cancers, however, we prefer to use larger amounts of radium than is present in the plaque. In the past, one of the difficulties in many skin clinics where radium was available, was the giving of repeated small doses not sufficient to damage more than a few local cancer cells but still allow the growth to extend locally. With the larger amounts of radium available we can give much more effective doses with resulting real cures.

In the past few months we have been gradually changing our technique on skin lesions. Formerly we were in the habit of giving fairly caustic doses with radium emanation in steel needles in the more superficial cases and using a slight amount of silver filtration for the more extensive growths. More recently we are treating these superficial cancers entirely with gamma rays. We are using a fairly large amount of emanation with at least 1 cm. distance, and filtration equivalent to 2 mm. of lead. This cuts out all of the beta rays and even some of the softer gamma rays. As a result we obtain a much more selective action on the cancer cells and a cure with far less local necrosis than formerly.

We are using more and more surface application over areas of lymphatic distribution, with our radium. In these cases we generally use a filtration of 2 mm. of lead, distance of 2½ cm. of wood and doses of 1000 to 1200 millicurie hours depending upon whether the areas are single or multiple.

We are also using radium on our cases of breast cancer under certain conditions. Most of the cases where radiation treatment is indicated, are receiving high-voltage x-rays. Some of the ulcerating recurrences, however, seem to respond very much better to surface radiation packs, similar to what I have just described. Also the recurring superficial nodules in the skin around the old scars respond much better to radium packs than to even the lower voltage x-ray treatments which we have been using until recently.

In some of the breast cases we have been using a combination of radium implantation with gold seeds or Lee needles, together with external radium packs. In some instances as a result of this treatment, definitely inoperable lesions have softened down and resulted in a condition that permitted of later conservative removal by surgery. In the surgical removal of these treated breasts, we have found that the electro-surgical methods have been particularly satisfactory.

THE USE OF ELECTROSURGERY IN THE TREATMENT OF CANCER

BY GRANTLEY WALDER TAYLOR, M.D.*

ELECTROSURGICAL devices have been in use in surgery for many years, but recently they have been very much improved, and have become much more effective. They are essentially a method of applying cauterizing heat. The cautery has been used for a long while in the treatment of cancer, and it has supplanted the scalpel in certain fields. These newer devices bid fair to extend these fields widely, and to open many others to successful treatment with the cautery.

The apparatus develops a very rapidly alternating current of very high voltage. The current is carried to the patient by two electrodes, a large indifferent electrode placed against the patient's body to permit ready passage of the current, and a small active electrode essentially like a scalpel, held in the surgeon's hand. The net effect of the passage of the current is to produce heat in the tissues immediately beneath the point of contact of this active electrode. Controllable variation in the type of current supplied determine the amount and type of coagulation produced, and the rate of cutting through the tissues. The advantages of the device are that it prevents bleeding from the cut edges, by coagulating the vessels encountered, and it also seals lymphatic vessels. It also automatically sterilizes the wound edges. The control of the bleeding is not perfect with the simple cutting current. Larger arterioles and veins must be clamped. However, ligature is seldom necessary; it is enough as a rule to touch the hemostat with the coagulating current, after which the hemostat may be removed without renewal of bleeding. We use the ligature only on larger

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vessels which cannot be controlled in this way.

These characteristics of hemostasis, sealing of lymphatics, and sterilization, determine for the instrument its special fields of usefulness.

Highly vascular tumors are very successfully treated in this way. Blood loss is reduced to a minimum, there are fewer troublesome delays for wiping, clamping and tying; the field of operation is not obscured with blood, and in consequence of these factors shock is considerably diminished. In operations about the upper respiratory passages the danger of inhalation of blood or detritus is minimized. Tumors which are too vascular for immediate excision can be extensively coagulated before a cutting current is employed.

Another type of tumor satisfactorily treated with the instrument is that so placed as to be inaccessible to complete removal in one piece, with an adequate margin of normal tissue. We may cut directly into the tumor, removing it piecemeal, without fear of disseminating the disease. The cutting current may be used with a loop electrode, like a curette, and the malignant tissue may be curretted away to a sound base. It will be obvious also that the instrument is peculiarly suited to use in securing biopsies, and in exploration of suspicious tumors. It is likewise useful for palliative operations on large fungating ulcerating tumors, for removal of necrotic sloughs, and for control of hemorrhages from ulcerated tumors of the mouth, breast, and elsewhere. Often, especially in the tongue, cheek, and fauces, the bulk of an inoperable tumor will seriously interfere with nutrition. In these cases, great relief can be obtained by incomplete removal of the growth, with electrosurgery. Frequently after such an operation we have found it advantageous to plant radium seeds into the part of the tumor which has been left behind.

A noteworthy fact, especially with operations of the palliative type that I have just referred to, is the comparative freedom from pain after such a procedure. The seared surface is protected by an adherent coagulum, the nerve endings are destroyed, and the patients are surprisingly comfortable.

We have not used the instrument, as some have proposed, in simple routine dissections, as in amputation of the breast or in neck dissection. We feel that the slough caused by even the purest cutting current is bound to be considerable in amount, and drainage will be much increased, and sound healing delayed.

The same precautions are necessary in regard to inflammable anaesthetic agents as with any other cautery device. Thus ethylene cannot be used, and ether inhalation is dangerous. We have used principally novocaine, nitrous oxide, and colonic ether.

You will see the instrument in action later, and I feel that anything not touched upon can be made clear then.

CANCER OF THE FEMALE GENITALIA

BY JOE VINCENT MEIGS, M.D., F.A.C.S.*

THE first symptom of cancer of the fundus of the uterus in patients before the menopause is an increase in the amount of bleeding and later bleeding between periods and a watery discharge. The first symptom in patients after the menopause is a watery discharge and then bleeding. Cancer of the fundus of the uterus, of course, is best treated by total hysterectomy and in favorable cases hysterectomy will give about 60 to 80% of five year cures. There are some cases, however, that are such poor surgical risks that surgery is contraindicated and in these cases it is best to give radium. Many of them are alive two or three years following the use of radium, and perhaps some of them are cured, but the great majority die of the disease. These cases are treated by the use of 2500 to 3500 millicurie hours screened by 1 mm. of silver, the silver tube being placed in the uterine canal. Frequently at the end of six months there is still a small amount of bleeding. The bleeding is probably due to recurrence of the disease and they are then given another intrauterine application of radium. It is a blind procedure as the radium cannot be placed accurately against the tumor. One uterus removed following this type of treatment showed it completely free from cancer. We have never seen a case of peritonitis caused by the extensive tumor of the uterus breaking down into the peritoneal cavity because of the radiation. However, most cases of cancer of the uterus are surgical and should be operated upon and a total hysterectomy done.

Dr. Sampson of Albany, who has done a great deal of work with endometriosis, feels that curettage is a dangerous procedure and that pieces of tissue fall into the peritoneal cavity and grow there, possibly being the cause of many endometriomas, cancer of the ovary and possibly metastatic cancer from cancer of the fundus of the uterus. For this reason he is very strongly against doing a preliminary curettage. Cases have come to our notice of blood coming from the tubes at operation following a preliminary curettage. However, all menorrhagia cases at the time of the menopause and bleeding cases after the menopause are not cancer, and therefore we feel that a curettage and a microscopic diagnosis are important and

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should nearly always be done as a preliminary to operation.

Cancers of the cervix are divided into groups according to the classification of the American College of Surgeons. Early and favorable cases are treated with destructive beta radiation, glass seeds and steel needles, and the cases not as favorable, but not entirely hopeless, are treated with gold seeds and silver screened radiation in the cervical canal, while we treat our hopeless cases with heavy lead screening. The cases treated with beta radiation have a great amount of sloughing while those treated with silver screened radiation and lead screened radiation, or gamma radiation, show much less sloughing. We do not feel that we have cured a case of cancer of the cervix with definite involvement of the broad ligaments. X-ray should be used as a post-operative treatment in all cases of high malignancy, for these are the radio-sensitive tumors.

The result of the treatment of cancer of the cervix at the Pondville Hospital cannot be reported as yet as the Clinic is much too young. But according to statistics from other clinics, at least an eleven per cent. salvage from all cases for five years should be obtained and a sixty per cent. salvage for favorable cases. We feel that radium is more valuable than surgery in cancer of the cervix, but surgery more valuable than radium in cancer of the fundus.

BIOPSIES AND FROZEN SECTIONS

BY SHIELDS WARREN, M.D.*

THE old problem of biopsies and frozen sections amounts to whether you are doing the patient more harm by taking the biopsy or more good by being able to establish the diagnosis. There is a great deal of discussion as to the value of biopsy from the standpoint of its effect on the patient. I think there is no question as to its value in the establishment of diagnosis.

In the case of a lump in the breast apparently localized and freely movable in a fairly young individual, you may not want to do a radical operation unless it is absolutely necessary. If without injury to the patient you could safely do a local instead of a radical operation that would be a decided advantage. If, on the other hand, a local operation is going to do harm to the patient there is no justification for doing it.

The breast is one of the places where the call for biopsy comes perhaps more frequently than others. There I think it is safe if we lay down certain processes to follow: First, there should always be a wide margin left around the lump when it is excised. It is always dangerous to cut into tumor tissue. Biopsy is justifiable when you can remove a nodule without cutting into it. In the next place, the diagnosis should be given as rapidly as possible after the tissue is removed. The ideal way is to have a frozen section outfit present and a pathologist who can make the diagnosis for you at the time. There are times when the specimen has to be sent to a distant laboratory with a wait of three or four days for the diagnosis to come back. That is not as ideal a way by any means but it is still a practical thing.

I feel it is safest from a pathological standpoint, when tissue is removed for biopsy, immediately it has been removed to place in the incision gauze soaked with a 2% solution of formaldehyde. It will serve to coagulate both blood and tissue juice so that there is not much chance of diffusion of cancer cells from the local site of injury. Electrocoagulation makes the use of formaldehyde unnecessary as it seals off the lymphatics and blood vessels at the time the tissue is removed. However, I must say that electrocoagulation is rather unsatisfactory from the standpoint of the pathologist because the tissue is so distorted and cooked it is hard to make a diagnosis from it. For example, in attempting to make a diagnosis of a relatively small V-shaped excision from the lip for questionable carcinoma, there should be a margin of at least a quarter of an inch of healthy tissue about the lesion. Otherwise it is impossible to make a diagnosis because of the destruction of the tissue through heat and the passage of electric current. Of course, if the tissue taken is in such condition that the pathologist cannot make a diagnosis, there is no point in doing the biopsy.

Biopsy is often done under cocaine. There are two points to watch here: First; if cocaine is injected directly in the lesion there is a possibility of channels for the diffusion of tumor cells being opened up. Second; it is extremely difficult to make a diagnosis because the cells are distorted by the cocaine solution, so from the standpoint of the pathologist at least, it is very nice to leave a small zone of uninjured tissue about the lesion rather than to infiltrate the solution all through the tumor. Just recently I had four or five specimens sent in where the novocaine infiltration had spoiled the possibility of establishing an accurate diagnosis.

Still another important factor is to be sure that you take the biopsy from the actively growing part of the lesion. It is always easy to get slough and necrotic material but that very frequently shows nothing at all of the actual lesion that is present. For example; in a growth of the rectum, a superficial necrotic portion may

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show only acute and chronic inflammation and in these rectal growths it is very important that in the removal of the specimen a portion of the base of a polypoid mass be removed so that we can tell whether it is a benign polyp or a malignant tumor invading the muscularis.

Three months ago I went out to do a frozen section on a tumor of the testis. A portion of the tissue was given to me and one section showed simply chronic inflammation. Indeed, it would have been easy to make a diagnosis of tuberculoma and assume the presence of tuberculosis of the epididymis. However, we felt the tumor was a little too solid and too large for this, and so the surgeon gave me a second piece which we were both sure included a portion of the growth and would be a truer sample than was the first. In this second piece we found an embryonal carcinoma of the testis. This serves to illustrate the importance of getting a strategic part of the lesion to send to the pathologist. This is particularly important when there is not close contact between the pathologist and the surgeon. Obviously it is very easy for the pathologist to make a wrong diagnosis if he gets the wrong tissue.

We are ordinarily satisfied with the pathologist's diagnosis, and if it comes back as chronic inflammation, when we thought we were dealing with malignant tumor, we are inclined to say that the clinical diagnosis is wrong and the pathologist is right. It all depends on his getting a satisfactory specimen of the growth itself. The whole purpose of the biopsy is destroyed if the growth is taken out under such conditions that examination is unsatisfactory, most frequently due to electrocoagulation or injection of a local anesthetic directly into the growth. Secondly; an entirely false picture is given the pathologist and surgeon alike if the biopsy is taken with the point of view of removal of the most easily accessible instead of the most typical portion of the growth.

It must be kept in mind that biopsy is a dangerous procedure. The average case should not be injured, however, if a biopsy is taken under the precautions outlined above and where the mass of tumor tissue is removed entire. A nodule should never be cut into but should always be excised.

There is one case where we do not take any precaution at all. That is where we do a uterine curettage. I hope that Dr. Meigs will say something about this later. Sometimes there is a wait of several days before the diagnosis has been established. In the majority of cases a frozen section can be done at the time. It is well worth while to curette before going on to a radical operation or to the application of radium. It is well to realize that the pathologist is working at a decided disadvantage because curettings are so difficult to handle. It is very hard to get a very satisfactory section for diagnosis.

As a final word, I should like to say that the biopsy is like the Wassermann reaction. It is to be considered as another portion of evidence to be used with the clinical findings in establishing a diagnosis. Particularly in bone tumors, x-ray diagnosis should be given as much weight as the diagnosis of the pathologist.

CANCER AS A RESPONSIBILITY OF EVERY CITIZEN

BY RICHARD C. CABOT, M.D.*

IT is of very great interest to me to watch the beginning of any movement like this cancer movement and see it get on its way. Many of the things we touch in medical social work and in social work represent ancient endeavors that were going before we were born. All the essential questions are settled, so far as they are going to be settled. It is of interest to see a movement shaping itself from the beginning as this cancer movement has. It is worth while to spend a moment or two on the question—Just why the attack on cancer is organized now, in 1928? Only within the last few years has any state in the Union taken hold of this enormous problem. If this is so enormous and important a problem, how is it then that so many public-spirited people as the Commonwealth contains should have managed hitherto to escape responsibility for attacking it? I don't know that I can answer this question, but I am going to attempt it. As far as I can see there are two reasons: one, general, and the other, specific. The general one is the more important. We have grown more sensitive, more ready to protest, less able to bear the burdens of inactivity. Our ancestors were able to bear them because they turned away from them. It is when only a few people face what cancer means that we are able to get along in the community without doing anything about it.

I am interested to call to memory the long years during which the people like ourselves tolerated human slavery, treating it as a matter of course. If you take the whole scope of history, the abolition of slavery was the day before yesterday. Slavery was a matter of course to the Greeks, and much later than that—indeed, we have to realize that it is going on today. Slavery is still going on in parts of Abyssinia and Arabia. It hasn't gone from the earth, but there is no longer anybody who is willing to defend it and say nice things about it as John C.

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Calhoun did before the Civil War. People, not unlike ourselves, calmly faced an evil which we will no longer tolerate. They entirely approved that which we find is intolerable and shan't be borne because we have grown more sensitive, as we have about cancer.

The second and more specific reason why the campaign against cancer has begun just this year is this:—we now have something encouraging to say about cancer. The tuberculosis campaign began partly because we had something encouraging to say about tuberculosis. The advent of radium and x-ray, the fact that we can get rid of some cancers and help a great many others in ways we didn't know of, the fact that we have better statistics, better diagnosis and better surgery, those give us points for support in interesting people, in such a campaign as this.

"Why is Massachusetts doing this", I asked Dr. Bigelow. "What is being done in other states?" and he tells me that nothing is being done in other states. Have we any more serious cancer problems here? Certainly not. It is merely that Massachusetts has been in the habit of leading. This was also the first state in which anything serious was done by the government about blindness, about feeble-mindedness, about cripples. We can't be proud about modern music, about modern painting, but I am proud of this day and of this Commonwealth for what is now being done against cancer. I think that the fact that we have begun it here with Dr. Bigelow and his corps of physicians, nurses, social workers, and citizens who have done so magnificently, is a thing in which we ought to take great satisfaction.

We live in a country where we are blamed because we imitate each other. But now and then imitation is a blessing. For instance, when you get a new campaign like this. I am sure there will soon be a half a dozen more states imitating what Dr. Bigelow and his staff are doing here.

Is this campaign sure to win? I don't think anybody can say so without qualifications. It is sure to win something. But one of the things that has impressed me is the moderation of claim of those who have spoken to us. Are we going to abolish cancer? I don't think anybody has ever said that Massachusetts is going to abolish cancer. I have heard nobody say that. We have said that we have good hope of diminishing it, and that we have certainty of diminishing the suffering. Dr. Trudeau of Saranac Lake used to keep on his desk a quotation apropos of the medical profession "Cure sometimes, palliate often, comfort always". When we think of this campaign it seems to me our hopes fall in with that. We may cure some cases and help a great many. If anyone asks "Are we going to cut down the mortality from cancer?" there seems to me a good fighting chance of it and all the more credit to those who are laboring in the campaign because it isn't certain.

One of the characteristic features of the appeal that the State Department of Health has made is that the work of fighting cancer isn't going to be done alone by the State, because it is a community responsibility. It has got to be done in a volunteer way that I think is entirely possible in America, but I can imagine how this idea of appealing to the public to fight cancer would strike German health workers. Yet for this procedure we have some first-rate precedents. Our next president established the greatest precedent for what you are doing here when he appealed to the American people to save food. A few of us can remember how crazy that sounded, to get a whole nation voluntarily to go on short rations! I have talked to Frenchmen about this and they could hardly help telling me they suspected I was lying when I said that this country voluntarily went on short rations in 1917-1918. This procedure, then, of appealing to a lot of amateurs to coöperate for the good of the whole community isn't new. It has been successful before because it is suitable to the temperament of the American people.

Is this the last health campaign that you are going to be called upon for? Don't you believe it. I am perfectly sure we are not done. I can see a great many other things we shall have to tackle sooner or later. We shall have to coöperate and you people will have to help, too. We can't say "Let's give a quick push and we shall be over and done with it pretty soon". We have just begun that which has got to go much further in terms of taxation and hard work for a lot of people. *This cancer problem is a part of the problem of chronic disease.* No community has faced the problem in chronic disease. In a study finished up a year ago we faced the *statistics* of chronic disease and of cancer as a part of that.

We can't use some of the selfish or self-regarding arguments that we have used in some of the other campaigns. In the tuberculosis campaign we said, "If you don't stop tuberculosis, your family may catch it". Lightning may strike in their own family. That was a direct and effective argument. The second argument we can't use is this—we can't say "We have now the knowledge whereby if you apply it we can stamp out the disease". The figures in tuberculosis look as if that might happen during the life of some of those in the room now. We can't say that about cancer. Nobody believes it is going to be stamped out in any fixed period.

We can't use the economic argument which has been very effective in tuberculosis. You have shown people how much tuberculosis costs, what a tremendous waste of money it is and that this can all be saved if you will fight this campaign. We don't know enough to say that

we can save money by this cancer campaign. You can't prove it. We are going to save something more important than money, but I don't believe we are going to save money. Our campaign must be based on grounds of pure humanitarianism. How much misery are you going to tolerate in your community?

I think we can fairly well say that the general problem of chronic disease isn't as great a problem as it used to be. I believe that the number of chronic invalids isn't as great as it was. Can we be sure that the total problem of chronic disease will be less in the future, that attacks like this will diminish the problem as a whole? You can't be sure of that. New diseases have a terrible way of cropping out, for instance,—sleeping sickness. We can't say that as we abolish old diseases, new ones won't come up.

I have tried to say all the discouraging things I could so that no one else would have to say them for us. The simpler part of our problem is the educational campaign for early diagnosis. That raises sound hope and it is a comparatively simple argument. Shall we make a community of neurasthenics by telling everybody to watch for cancer and to have doctors look for cancer in all suspicious lumps, ulcers, and haemorrhages? That is a question I hear from time to time. I have been interested all my life in neurasthenia and in things that bring neurasthenia. I ask "Are these warnings that are being given as to cancer going to make people nervous about themselves, fearful, etc.?" No, I believe not. If you get people to watch for lumps, bleeding and ulcers, that is about all they have to watch for. We don't have to go into the obscure diagnoses of cancer of the intestines or of the stomach. If you rule them out as you have to, it comes down to the three simple things about cancer—lumps, bleeding, and ulcers, which are very easy to warn people about without making them neurasthenics.

This campaign against cancer is one for the care of people who are now going without proper care, for early operation if that is desirable, for home care through district nursing or other sorts of home care, for care in special cancer hospitals or in general hospitals. I don't believe anybody yet knows enough to say how any particular community should take care of its cancer problem. They should face the facts in the first place, press the facts home to everybody in the second, and then do what seems best. Home care and institutional care go hand in hand, in the life of the persons afflicted with cancer.

The State of Massachusetts by taxation can't do it all and isn't going to try. It hasn't been the policy to do things that way and they won't do it now. It might be more efficient if it were centralized, but it isn't going to be done that way. We must use Mr. Hoover's method of trying to make every community take stock of its own difficulties and make its own plans. Too few communities now see the cancer campaign as their business. Why should they do it? The only answer is they could not help doing it if they only knew the facts.

I take students in my classes at Harvard to various institutions. I take them to Tewksbury, institutions for the blind, prisons, etc. Students sometimes say "Why do you make us go on that tour? It is so depressing". I answer:—"How is anybody going to get busy to make the facts less depressing unless they have seen them?" That is just what you and I ought to have—the depressing facts. We have to confess that civilization is the danger of being able to put out of sight and out of mind its old people, its insane people, its feeble-minded and then this group of chronic sick who are still more out of sight today than any other group that exists. If anybody says "Why do this work?" I should say "What is the alternative?" It seems to me essentially the alternative of the parable in the Bible where a certain gentleman *"passed by on the other side"*. Why did he pass by? Because if he had gone by the wounded man close to, this Levite couldn't have borne seeing the trouble with that man. He would have been forced to do something about it.

Can we truthfully say that an enormous amount of suffering is to be saved if the measures which the State proposes are carried out? Yes. A tour of this institution at Pondville is a convincing answer to that question. To see the amount of suffering, both mental and physical, that is saved here is all one needs to be a missionary for this cause. I came here not very long ago for the first time, fully prepared to see people tackling the impossible task of keeping a cancer hospital from being a depressing place. To my great delight, I saw the opposite. As I compare it with the other hospitals that I know, this institution is not more depressing, but less depressing. If it can be done here it can be done elsewhere. We don't know what amount of pain we can save, but I know that it is a great deal. The mental atmosphere seems to me an enormous thing. I have seen something like this done in the Holy Ghost Hospital under religious atmosphere. But that, one can't use in a state institution and the miracle is that without ecclesiastic machinery they so keep the spirit of religious cheer here.

Everyone needs ammunition for this campaign. Visits like this make us realize one of the things that few even of the medical men realize—how much you can do for cancer pain with aspirin, and how little morphine is needed. I was astounded to know how little morphine they were using at this hospital.

I have spoken of visits my students make to various institutions, prisons, almshouses, hospitals, etc. I am perfectly prepared now for the certain results which I get when I ask the stu-

dents to write their impression. A respectable minority of the class always has the brilliant idea of killing off the feeble-minded, the insane, the aged, etc. But somebody must be ready to make himself the judge to decide who shall be killed off. It seems a different matter when it comes close home to themselves. I say to them "Why not kill off all the men that get 'E' in the next examination".

We have to face in some form, however, a question not quite so crude as that in many cases of cancer: "Shall we try to make a person live as many days as we can?" I don't believe it is or should be the policy of this institution. What we want to do is cure as many as possible and to save suffering. Often I think people had better go home and die where they want to rather than remain in the best possible conditions for longevity, when they don't want to live. The principle of the sacredness of human life doesn't extend to prolonging a miserable existence by every possible means. I am pretty sure the policy here will be one that I have tried to indicate—save every bit of suffering you can, but do not insist on doing everything that can be done to prolong life.

I believe we are all the more keenly interested in this campaign because it shows something that we believe is courage and not foolhardiness, a combat with an enemy that most of the world and most of the centuries till now have felt was too great to attack. Perhaps without some of the modern arts of treatment we might still feel too faint-hearted to attack it, but as it is, there are many here present who will look back years hence and say "I am glad I was in at the beginning and have had a hand in this great movement."

THE ENLARGING CANCER PROGRAM

BY GEORGE H. BIGELOW, M.D.*

THERE are one or two things I wanted to go over:—

1. We are making sickness surveys. We have taken a residential, a rural and an industrial community. That is going to give us very interesting data. We soon hope to have this available, which will be of enormous assistance to us in guiding the future program for degenerative diseases.

2. The follow-up of the non-cancerous is an important matter which we have stressed with the social workers. It is interesting that one of the clinics has insisted it wasn't their job to follow up the non-cancerous, and when specific cases have presented themselves the staff has insisted that the non-cancerous should be followed to adequate resources. But we must not push the clinic staffs too far in regard to the non-cancerous. They have been selected primarily for their interest in cancer. Also, we must remember that our first job is cancer and that one-quarter of a million dollars is appropriated for the purpose.

One of the criticisms against our program is that through the decentralization in the sixteen clinics, we are going to lose more in quality than we make up in the time-saving of bringing the diagnosis and therapeutics to the individual. I think our greatest battle is going to be to maintain quality and to show whether decentralization is sound, or whether we should centralize and bring in the patients to a very few clinics.

The demand for hospitals of all kinds is increasing. You can help us by studying your community, and enlisting the support of your visiting nurses to the end that hospitalization may be as selective as possible. Wholesale hospitalization means economic ruin. Prevention is the only straw. We must grasp it. We can prevent 30 per cent. of the cancer deaths. Every two hours in Massachusetts there is an unnecessary death from cancer; unnecessary if all our information were used in each case sufficiently early. Surely something to work for!

This spring, instead of the cancer campaign, we are going to have a post-graduate course for physicians. Co-öperation of the Boston hospitals will be sought as was so notably done by the medical society in Philadelphia recently.

I want to say in closing that I was astonished at the figures we got following the cancer campaign of last spring:—12,000 persons consulted doctors as a result of the campaign, and for every one that came to the clinic, twenty-two went to private physicians. This was principally accomplished by the state and local cancer education committees. More strength to them!

CANCER EDUCATION IN MASSACHUSETTS

BY ROBERT W. KELSO*

HERE is a program inaugurated by the state representing an attack upon one of the greatest disease problems that beset the world. Its basis of construction must be the technical knowledge of the disease and technical knowledge of methods of combating it.

It is highly necessary to develop the instrumentalities by which that special knowledge can be made the common knowledge of the community,—by which appreciation of the presence of that knowledge can be brought to the common people. So necessary is it to develop such a method of approach that the social side of a campaign against disease is fully as vital as the

*For record and address of author see "This Week's Issue," page 149.

technical medical side. That fact has recognition in an instance of deep wisdom in your State Department of Public Health. It is the tendency of government to do things according to rule. If you have had any experience in public service you know that the moment you digress from the set rule you are likely to have trouble. The tendency is, therefore, to obey the statute implicitly. In this present cancer problem the statute said, "You shall establish a hospital and you shall put the sick into it. You may establish clinics."

Should the State Department of Public Health, confronted with that problem, follow the line of least resistance, set up a place for the helpless to die in, found a few clinics, and then come back to the Legislature next year and say, "Well, here you are"?

It may be all right for the Department to organize the technical knowledge with regard to this disease and the statistical information regarding its application, but those steps in themselves would not constitute a program. It is necessary also that this knowledge be got to the people. This is an educational problem. What your State Department did in fact do, when placed in control under this statute, was first to select a group of private citizen volunteers who should plan out and execute all practicable ways of carrying the program to the people of Massachusetts. It may be asserted therefore that the educational committees attached to the several clinics now scattered throughout the Commonwealth are as vital in this program, as a knowledge of deep therapy, or a knowledge of surgery. They are as essential as hygiene practice.

It should not fill you with a sense of futility that you have not been consulted for a considerable time. Your service is not dead. Your judgment is there to be sought; your assistance is there to be had. There is great value in the mere presence of an educational committee connected with the cancer clinics. Your advisory committee is a group readily available and quickly consulted upon problems of publicity arising with the department. For instance, is it advisable to carry on a distribution of pamphlets? We, the department, wish to know what you, the advisory committee, think of that—you who represent the public. Just how should we present the known facts about symptoms? Shall a definite effort be made to place copy in various house organs, etc.? You persons representing all walks of life; can anything be done to extend the teaching of cancer diagnosis in the medical schools? There is a great need for such teaching somewhere. Might a cancer institute similar to the Tuberculosis Institute be arranged?

These questions are asked of you laymen because this is an educational program. It is with a view to having you come here and talk things over that you are asked not to settle any issues this morning, but to get acquainted and keep up your acquaintanceship in the service in which we are associated.

This program is only two years old. In terms of money it now involves one-quarter of a million dollars of tax money. We in Massachusetts have made something of a reputation already. Our plan is now heard of and talked about all over the world. One of the efforts that made this result possible was your cancer week, a project pondered over for a long time, both by the Department and by the advisory group. We believe that with hard work the Public can be brought to a realization of the facts about cancer; and that the fatal period of delay in treatment can be greatly lessened.

An advisory educational committee has no particular technique. It is a group of citizens representing many phases of social and business life in our various cities and towns. When a question is put to them they react as the average citizen is likely to. That test reaction is of great value to the Department. You, who make up these educational committees, are in touch with men's clubs, church groups, educational groups, parents and teachers, in so many ways. It remains for you as citizens to carry our bit of news and our proposals to those groups, impressing upon them how wise it is to have people take early advantage of so unusual an opportunity for diagnosis.

I suppose sometime the public are going to get over that fatal inertia which keeps them from seeking an examination, because they are afraid the answer will be unfavorable.

In 1910 the Psychopathic Hospital came into being. It was suggested that provision should be made for volunteer patients; so that any person might come in to see if he was mentally ill. People said, "You'll never get a fellow to come to have his brains examined, unless he is forced by law to come. Your idea is absurd." And so it was from their point of view; but as it turns out, we now have several thousand persons coming voluntarily each year to our psychopathic hospitals and receiving-wards for the purpose of seeing whether they are suffering from mental illness that might be relieved by prompt action. In this incident we have a precedent for success with our cancer education campaign.

If you are familiar with the inside of the poor American home, you can picture to yourselves the mother beginning to fear she has cancer. She has seven children. They have very little to eat. She has to help father to make things go on the money he has. How long will she last? She is afraid she is getting a cancer. Will she have it diagnosed? She will stand back in fear. It is a common situation. How is it practical for a state educational program on cancer to secure the confidence of that

woman? How can we reach her? We shall reach her by the slow process of spreading general information, thereby convincing her that she is doing better for her children and her husband if she seeks an examination immediately. This can't be done by advice out of a medical clinic, since it has no contact with her. The visiting nurse must be pretty well coached, and there must be a social worker to approach the home on a friendly basis.

We desire that each member of our educational committee shall consider himself a vital part of the comprehensive program. We are going to ask each of the various committees throughout the State to give us a statement of what it has been doing and thinking during the year.

ROUND TABLE DISCUSSIONS

POLICIES for cancer education were discussed at a round table of the educational and social workers. The following points were brought out:

1. Massachusetts is fairly well covered by existing clinics.
2. Cancer weeks have largely served their purpose and should only be used where facilities for treatment are available.
3. In communities where a large amount of educational work has been done the subject of cancer can be approached by discussions of the degenerative disease problem and periodic health examination.
4. Efforts should be made to emphasize single types of the disease in which favorable results might be expected.
5. Conditions which have been found frequently to precede cancer should be brought to the attention of those in whom they may occur.
6. All information regarding cancer should be straightforward and truthful.
7. The news value of prominent physicians speaking before organizations is great. They should be freely quoted.

CANCER CLINIC POLICIES

The policies of the clinic were discussed, based on questions that had been asked of the various clinics, and the following decisions were reached:

1. A code of procedure for clinic staffs would be undesirable.
2. Clinic doctors should give clear directions to the social worker regarding disposition of patient and nature of report to be sent to attending physician.
3. Consultants at the State-aided clinics should receive an honorarium of $25 plus expenses for the clinics in the eastern part of the State; $50 and expenses, west of Worcester county.
4. A list of conditions which may be termed pre-cancerous should be prepared, in order that the same terminology be used in all clinics.
5. Women over 35 who have borne children should obtain a competent opinion as to whether they require surgical repair of lacerated cervices.
6. Patients should not have their financial affairs, diagnosis, etc., discussed before other patients.
7. At the first visit records should be as complete as possible. A final diagnosis cannot always be made, but a medical scheme of procedure should at least be prepared at the first visit and the possible diagnosis recorded.
8. Dissatisfaction would be avoided if clinic doctors did not tell patients that they are being sent to Pondville for any specific type of treatment such as x-ray or radium, as the medical staff of the hospital must be free to use its best judgment in each case.
9. The local medical cancer committee must instruct the social worker how to handle the patient with no local physician, but able to pay for treatment. It is suggested that the social worker should give such patients a list of names of men qualified to treat the type of disease in question. The local medical committee must supply such a list.
10. It should be the aim of every cancer clinic to give a complete physical examination. A final diagnosis need not be made for the noncancerous but at least it would seem that the family physician might be informed that a heart lesion, a lung lesion, or some other condition exists.
11. Contributions of money may properly be accepted by clinics and could be used as the clinic committee sees fit.
12. The clinic physician should inform the patient or a responsible member of the patient's family of the patient's condition. He may delegate this to the social worker, but she must act as his agent and not on her own responsibility.
13. It is desirable, in order to avoid misunderstanding, for the social worker to make a personal contact with each private physician on the first case referred to him. In subsequent cases, she may notify the physician by personal letter, form letter, telephone or visit, whichever fits the local situation best.
14. If x-ray is needed to complete the diagnosis the patient may be asked to pay for the same, provided no patient has any of the service curtailed because of inability to pay.
15. It is important that all patients be followed up by the social worker, and clinics must try to do this as far as possible. Both the can-

cer case and the non-cancerous case should be followed; the cancer case for the remainder of his life, the non-cancerous case until he has made contact suitable for cure or relief. The well-to-do should be followed up with the same thoroughness as the poor. It must, of course, be remembered that cancer is the first responsibility. But no clinic can feel that it is doing its full duty unless the non-cancerous are followed to adequate resources suitable to their means, since the really staggering problem today is that of degenerative diseases.

16. The amount of treatment furnished by a given clinic must be determined by the clinic committee. The responsibility of the clinic is to furnish adequate diagnosis, to decide what treatment is required, and to see that the necessary treatment is made available for the individual patient.

17. The State cancer clinics are intended to supply adequate consultation service on cancer cases for the citizens of Massachusetts. In case the family physician does not agree with the diagnosis of the cancer clinic, arrangements for a further consultation may readily be made. To this end it was agreed that the cancer patient, or a responsible member of his family, should be told of the diagnosis at the clinic, before being returned to his private physician.

SOCIAL INFECTION AND THE COMMUNITY

Lecture by Bishop Lawrence* at the Harvard Medical School, Sunday, January 6, 1929

IN the spring and summer of 1927 the parents of little children throughout the State were anxious, and some of them panicky, for public notice had been given that an epidemic of infantile paralysis was probable: and who that has watched even one case of a paralytic victim can wonder at the dread? The epidemic came and went, resulting in 1189 cases, with 169 deaths.

Meanwhile, and during that same year, and for many preceding years, two diseases were sweeping through the State, killing at least 504 victims each year and sending 243 into insane asylums. Yet with all this devastation there was hardly a whisper of the scourge in the public prints; and though tens of thousands of men and women talked privately of it, and thousands of people were indirectly affected, silence upon the dread disease was good form: the lid was clamped down.

To go further, throughout the nation there were reported in 40 states 2520 cases of infantile paralysis, and in the same year 200,534 cases of one of these diseases alone, entitled by Dr. Osler, "the greatest killing disease."

These venereal diseases are not mentioned in polite society. There is a common consent of silence. Newspapers and periodicals which do not want to lose their circulation are careful not to offend their readers. Meanwhile the carnage goes on and we live in a fool's paradise. You know already their names, but you do not speak them. They are syphilis and gonorrhea.

Soon after we entered the war and the recruits were coming to camp, the problem of their health, social welfare and moral protection, and that of the women of the neighborhood also, arose. There were hearings at the State House, and new laws were passed.

As I was walking down Beacon Street from one of these hearings, my companion, an army officer, said, "I tell you, Bishop, when the physical and moral welfare of our boys in camp is at stake, the legislators and people take notice." "True," I replied, "if we are going to build up an army and beat the Germans, we must keep the men from disease, clean and vigorous." "But," I added, "do you think, General, that the moral and physical welfare of our boys and men is of any less value to their parents and the community in peace than in war? Some of us have been up to the State House on this job several years with very meagre results. Have we got to have a war to make legislators sit up and take notice?"

The work of our country in camp protection is one of the great records of the war. Two years before, a few months of encampment on the Mexican border, with its horror of immorality and disease, some of it brought back into our villages and homes, frightened those in authority. The sacrifice was almost worth while; for it set military and civil administration upon a great undertaking. How vividly I recall standing in the office of the Secretary of War, Mr. Baker, in Washington, when he said to me as I asked him what was going to be done in France to carry out the protective policy in our home camps, "Bishop, we are going to give the boys the same, and if possible, better protection in France. We are going to send across every agency, medical, moral, social, and religious. We are going to draw upon the finest men and women in the land, young women, not old maids, to carry out the purpose." And the Nation did it. In the doing of it, through discipline, moral leadership, and medical skill, was found good success in prevention and alleviation. The recruits who came from homes and cities diseased were as a whole made clean and fit soldiers. It was one of the elements in the winning of the war.

It so happened that among the ten thousand

*For record and address of author see "This Week's Issue," page 149.

voices upon the subject, I gave in one of these Sunday afternoon courses a lecture which through the commendation of Surgeon-General Gorgas was distributed widely through the army. Dr. Bigelow, the Commissioner of our State Department of Health, knowing this, asked me to give this lecture today to help meet the conditions in peace. I acceded to his request, not by preference, for the subject is not a pleasant one, but as a public duty.

The fact is that since the War there has been a decline in moral and physical welfare along the line of these diseases: but it now seems as if we had reached the beginning of an upward curve, whose upward movement, however, depends upon the intelligence and support of the people.

My purpose in discussing the relation of these venereal diseases to the communities is first to state a few facts, and then to recall some of our present social conditions, and finally to suggest a few lines of beneficent action.

First as to facts. While several of the most dreaded diseases have been deprived of some of their terrors during the past generation, we still have a quickening fear of diphtheria and typhoid fever. In the year 1926 there were in 46 states 41,377 cases of typhoid fever; in 47 states 93,425 cases of diphtheria; and in 41 states 200,524 cases of syphilis alone. In Massachusetts only communicable forms of disease have to be reported; and it is estimated that for obvious reasons only 15% to 25% of the two venereal diseases are reported; yet during the last ten years there have been reported annually 8300 cases.

Or turning to the death roll in this State: in 1927 there were from typhoid 44, measles 87, infantile paralysis 169, diphtheria 268, influenza 326, and syphilis 417, note that gonorrhea is not included.

In other words, the two venereal diseases claim the greatest number of victims of any of these communicable diseases, both in sickness and by death. And yet we live on, silent, unmoved, with heads buried in the sand.

Let us look a little deeper into the problem.

There is a common notion that these diseases are found in the slums, among prostitutes and brutal beings, but not among the more refined. We know enough of all diseases these days to be aware that they are not respecters of persons.

While the common prostitute is being driven to cover by the modern police, the carriers of these diseases are in our apartments, boarding houses, and homes. We dread the carrier of typhoid; there are other carriers. Is there any social group or circle in which it is not whispered that so and so's illness is really not arthritis, or locomotor ataxia, or imbecility, but is due to some shady event? A boy from the best of homes finds himself one evening with a lively crowd of boys and girls: he takes two or three drinks, loses his head; and in a few days finds that he is diseased and in such a way as to harm him for years, drag him down for life, or send him to the insane asylum. No one but the doctor and his family know the real cause.

Let me tell you of a family of well-to-do people in this State. The two children must get medical advice for the rest of their lives on account of their inherited taint, the wife and mother is in a sanitarium, and the father is changed in appearance almost beyond recognition, because in a moment of stupidity or passion before marriage he contracted syphilis.

The first knowledge of an attractive girl of one year's marriage of the dread word may be the warning of her doctor that the little baby is diseased, perhaps for life, by her husband through her.

A high authority writes, "The commonest single cause of abdominal operation in women during the first year of their marriage is gonorrheal infection from the husband, who may have thought he was cured: and word goes out to friends that it was inflammation of the bowels, or chronic appendicitis." Dr. H. C. Soloman estimates that in the United States about 75% of all syphilis in females is in married women; in large part through their husbands. At the Boston Dispensary of 554 cases of gonorrhea 44% were in married women with no probable extra-marital source, and 8% in children; thus 52% were innocently infected.

One turns with sorrow, and sometimes horror, from the tragic stories which multiply upon us. The harvest of wild oats is a field of desolation; and wild oats are carried by wind and transported to green fields and innocent corners.

Herein is the tragedy of it. If only the wilful and the guilty would suffer for their sins! But the ignorant boys and girls, the helpless women, and more than all, the little children blinded for life, the youth pallid and lifeless, and the mother watching the waning strength of her only child! Do we know the hidden shame of an attractive, refined girl who suspects that she inherits the taint, and fears that her friends suspect it? In pity for the innocent we cannot sit still and clamp down the lid.

From the economic point of view we catch some suggestions. In the war our dominant note was efficiency; the competition of guns was on, and that involved the men behind the guns. No colonel would send diseased men into camp or battle. We know well that the competition of nations is still on; for trade, for prosperity, for power. And he is a fool who thinks that the times of peace are safe times for slackness. Of two factories running on even terms, the factory which has the larger per cent. of hands free from disease, alert, strong, will win out.

Figures show that the leading age for contracting these two diseases are from 15 to 29.

centering at 20 and 21, just when the boys and girls from our homes, schools and colleges are beginning to win their wages and make their way in life. And even though the cases be light, they, if they do their duty by their families and the community, lose heavy money and much time in illness and medical treatment; more than in any other common diseases. The national expense in loss of time, loss of strength, care in insane asylums and poor houses, in private homes, and by imbecility and pauperism, is untold.

Congenital blindness has drawn a heavy toll. Massachusetts work is now so effective that total blindness of children from this cause is unknown, but with tragic frequency infants' eyes are still damaged irreparably by gonorrheal infection.

Who knows of the tragedies of social isolation of men and women of high character suffering from inherited disease? Who knows which are guilty, which innocent? And the innocent often of the finer grain suffer the most.

Are our social changes leading us to more hopeful conditions? On the favorable side we have the opportunity of greater medical skill and fuller knowledge: physicians are more alert to the inroads of the disease; Boards of Health are moving forward; police regulations are more severe; common prostitution is less; playgrounds, athletics and greater freedom between the sexes help to a degree.

On the other hand, the massing of young unmarried men and women in cities, shops and boarding houses, the dance hall, and the freedom which gives opportunity are increasing dangers.

"We don't have to go to prostitutes in these days," said a young man, "We get what we want in our own crowd." And there are thousands of young people who are between the conventional and the immoral groups open to temptations and invitations to which we, who are protected by tradition are utter strangers. A few years ago we were talking of bringing men up to the single standard, the standard of women. Now the question is asked whether the women who have taken men's places in many walks of life are not dropping towards the men's standard.

Generalizing from one's limited knowledge of people is unreliable; but as we recall the statistics and realize that perhaps only ten per cent. of the diseased are reported, and then as we add those far larger numbers who are more or less loose in their lives, occasionally or frequently promiscuous, we have what we cannot help thinking are alarming social and moral conditions, conditions common to all social groups.

What then should our lines of action be? As this is a medical lecture, I speak chiefly from a medical and physical point of view.

First, we must have facts, not social prejudices or traditions or expletives of horror, but facts. These are coming on apace through our modern social students and studies. There is no use in facts unless they get through the experts and doctors to the people. The lid of silence must come off.

Let me give you a bit of personal history. I can well remember when a boy I first saw a consumptive. A thin, pallid girl was standing on the sidewalk, alone, desolate in look, and my playmate pointing at her, said, "She's got the consumption!"

The word "consumption" was always spoken in an undertone; and there was something to be shunned in the consumptive, although its infectious characteristic was unknown. This silence may have been due to the fact that it was then a fatal disease, and one did not like to have the relatives or the patient hear it. There was more than that. Because the word was unspoken and the disease a silent one, there was something uncanny, unsocial or shameful about it. At all events, science, intelligence, mercy came to the rescue; and now through the driving power of campaigns, tuberculosis has its place in everyday life, and the word is repeated as freely as is measles.

It is only a very few years since the word "cancer" was taboo; probably for the same reasons as was consumption; and even today there is a silence and reserve which suggests something mysterious. It is associated in many minds with something dubious, possibly shameful. Silence and repression of subjects which belong to the whole people excite unhealthy curiosity, breed old women's fables, and arouse undue interest. With a fuller knowledge of cancer the lid of silence is gradually rising, and we are all of us, those who have had it come close to home, the happier and wiser for it.

As to the venereal diseases, there are difficulties which cannot be associated with these other two: the problem is intertwined with sex, the sex passion, with love and illicit love.

I do not minimize the difficulty of publicity, of education, especially of the youth. Every one of us from the remembrance of his own youth and his knowledge of the youth of today is aware of the persistent and prurient curiosity about sex, which like a pestilential atmosphere poisons the mind and imagination of boys and girls. Those who by hearsay or foul books have some inside knowledge of sex experience become centres of inquisitive groups. The danger here and throughout young manhood and womanhood is not so much infection of the body as of the mind and imagination: the very fact of the silence and the mystery increases the whisperings, talks and foul acts. While all this cannot be stopped, it can, I believe, be checked and the talk and thought of youth be put on a healthier plane.

In the past I have distrusted the advice of those who have pressed for common education in sex; but in spite of tradition, prejudice and

taste, I have been driven to the conclusion that the lid of silence must be wrenched off, and the subject treated in its fullness, as embodying facts of physical, social, moral and spiritual truth.

How shall this be done, you ask. I do not know. I know only that it must be done, and that a beginning is being made by leaders in physiology, sociology, ethics and religion. Of experiments there are many; failures and worse than failures not a few; successes also.

Shall young men be given talks upon the subject in the mass: in colleges, in great industrial shops? Young women also? Perhaps so, if the talker be very wise and very fine in character and if you cannot do any better. Better, however, the same talker in a small group.

Shall the boys also have talks? Yes, when the conditions are good: better a small group.

Shall the children be taught? "What," says the conservative parent or teacher, "Give that obscene stuff to little children? I can't and won't." If the teaching is given by the right person, the child sees no obscenity; to him the whole subject is as simple and natural as any of Nature's actions. Indeed the best medical and educational movements seem to me to be towards bringing the education down to the little child from three to nine years old, taught by his mother as he has been taught other facts by her.

How few, how very few mothers can do this! True, but they can be multiplied in time. And what I am trying to do is to present the best of today, in order to work towards a better in the future. Meanwhile, unless we move in some direction and act along some lines, these two horrible diseases are eating into the vitals of our physical, social, and spiritual life.

As a problem of citizenship, health, and economy, the State has definite responsibilities in connection with these diseases. Its chief, though not its only agency, is the State Department of Health. Before and during the war positive action was planned and pressed; and with peace began a more systematic development of the reporting of cases and of clinics. Of course the purpose of the Department is in no way punitive; that is the job of the police,—but purely medical, preventive and curative. Because of shame, ignorance, and other causes, improvement in reporting is very slow; perhaps not more than 15% of the cases, and yet without reports efficient help is impossible; and too sharp pressure on the part of the Department drives the victims of the disease to silence or to quacks. Then again, faithful visits to the clinics involve time and loss of wages; for instance, a common case of gonorrhea demands twenty-five visits: the average number is not over ten, which means that a large proportion are not cured and remain a menace to the community. The truth is that these diseases are very serious, and even in their lighter forms may develop serious infection years after.

Syphilis, the more serious, can be through recent discoveries the more adequately handled. But for successful treatment not less than fifty visits spread over at least two years are necessary.

Gonorrhea is by some victims passed off as a joke; they learn otherwise later. Medical science has not yet been able to give absolute assurance of sure cure even after a long period of treatment. The toll of gonorrhea is not in deaths, but in the tragedy of lives of invalidism, suffering and misery. Thousands on thousands of women who would otherwise have been vigorous, buoyant and happy, are dragging through life weak, depressed and hopeless.

Again, most general practitioners, family doctors, are naturally averse to taking such cases, which, if many, injure their regular practice and bring them into uncomfortable associations. How can you blame the practitioner with the limited equipment of a private office hesitating to attempt the treatment of acute, infectious cases of these diseases because of possible menace to his other patients?

The Department of Health has now developed, with the assistance of local Boards, clinics over the State. These should be multiplied and thus made more convenient to the victims. Any person who wants information as to these resources can obtain it from the State Department of Health.

At present the laws bearing on these diseases are sufficient; but as is the case with most of our laws, their execution is inperfect. The cases, the patients, must be followed up. There are now being organized by the Department social workers, who will have the tact and skill to follow up the patients to their homes and associations, discover their heritage, whether pure or diseased, look up the sources of infection, and see that visits to the clinic are regular and sufficient.

It is essential that people learn not only how serious these diseases are, and how to avoid them, but also what should be done for complete cure if they are infected. Conscious that official and State service has its limitations without the voluntary help of citizens, the Department has behind it the Society of Social Hygiene, which is now entering upon a larger work of education; and through its agency men and women skilled in instruction will respond to calls from school-teachers, clubs, industrial leaders, and others to talk to groups of men or women, or boys or girls. Superintendents of schools, teachers and other citizens are already bombarding the Society for such service. Wise and helpful leaders must be and will be found. The budget will grow steadily. The office of the Massachusetts Society of Social Hygiene is 41 Mount Vernon Street.

Who can guess the number of tragedies in

our homes, our high schools, and elsewhere among boys and girls who from ignorance bring themselves and their families into sorrow and disgrace? Their response is a true one: "We didn't know." Who stands responsible, these two children, or their parents and the community?

These and a hundred other instrumentalities which the State with the support of towns and citizens should carry through cost money. The parents of our children, all citizens, will do well to see that larger appropriations are made for these purposes, and that playgrounds and other means for building sound bodies and employing leisure hours be created and supported.

Medical experts to whom I have read this paper have warned me that the tone is too moderate and the figures too low; for in reporting diseases many doctors will give any other cause if they can, and families are naturally relieved to have their shame hidden; and in case of death the immediate cause is frequently a disease which is not venereal but which has been caused by it.

May I in closing turn from the medical phase of the subject with three remarks.

1. We (and I like to include myself in the present and younger generation) have broken away from the rather encrusted conventions of the Victorian era, have reacted from many uncomfortable traditions, and have issued a declaration of independence for more individuality, fuller liberty of thought, habit and life, and a right to do as we please; a healthy reaction on the whole, provided we keep in mind one essential condition.

Personal liberty cannot be long sustained without a sense of personal responsibility. Slaves do not need character, but freemen do. Freedom involves self-government, self-control, conviction, moral courage, and realization of the seriousness of life. Bursting out of the school doors for recess is great fun; and the freedom from restraint is healthy: nevertheless school hours do have their value.

In our break for personal liberty have we developed with equal rapidity the elements which make up what we call character? A capacity really to use and rationally enjoy our freedom? Have we the self-control, the moral courage, the chivalry and the unselfishness to be in command of ourselves and our liberty?

2. In this study of venereal diseases and the infection of the community, I have been startled at the bare statistics, but I have been more deeply shocked and saddened by the revelation of loose living and immorality in this our American population. When one multiplies the incidents of disease with the probable incidents of illicit vice and the promiscuousness of men and women, especially the younger, one wonders whether our institutions and our liberties can stand the strain.

3. This problem is not an isolate one. Like all human interests, it is bound up with the whole problem of man and life. The physical, social, moral, and religious conditions are inextricably interwoven: every boy and girl, every man and woman is a unit, a most interesting, mysterious and priceless unit. If we are to serve this generation, doctors, social workers and ministers must work together; parents, children, old and young must understand each other; whether the family live in a house, apartment or basement; in hovel or palace; the family is still a family, and upon mutual loyalties, loves and sacrifices our health, happiness and liberties depend.

THE INJECTION TREATMENT OF VARICOSE VEINS*

BY RICHARD B. CATTELL, M.D.†

THE injection treatment of varicose veins has now been demonstrated to be of great value by an extensive trial in many clinics. As a therapeutic procedure it has great merit on account of its simplicity, its relative freedom from complications, its good results, and because it can be done on ambulatory patients without time loss or physical disability. The basis of this treatment lies in the action of sclerosing solutions on the intima of veins, producing a chemical thrombophlebitis, with obliteration of the lumina of the venous channels. It has been used for several years with success in continental Europe, particularly by French and German surgeons.

There are fortunately few contra-indications to this procedure. The poor results that have been reported are in patients who obviously should not have been subjected to this form of treatment. Patients with the following conditions present should not have injection:

1. Phlebitis.
2. Cardiac decompensation.
3. Severe nephritis.
4. Closed or incompetent deep veins.
5. Generalized edema of the extremities.
6. Old debilitated persons.

Phlebitis—as evidenced by an elevation of temperature and tenderness over the veins—should contra-indicate injection. The inflammatory process *per se* may obliterate the veins, while injection at this time may lead to localized cellulitis, septicemia, or embolus formation. It is doubtful whether incompetent valves in the deep veins or closed deep veins should exclude injection of the superficial veins, but it probably

*The Lahey Clinic, Boston.

†For record and address of author see "This Week's Issue," page 149.

should not be done except where there are definite symptoms present. The function of the deep veins is not accurately determined even by the Trendelenburg test. It is not likely that attention would be drawn to the veins in cardiac decompensation or nephritis. These severe conditions require treatment themselves and the care of varicose veins is of secondary importance. In old and debilitated persons, the enlarged veins are usually only one of many complaints, and the obliteration of the veins probably would not lead to sufficient improvement to warrant it being done. The presence of generalized pitting edema in the legs presents certain technical difficulties of injection and it should wait until more normal conditions exist.

Many different solutions have been used for the injection of varicose veins, but the more dangerous ones have now been eliminated. Calorose, mercuric iodide, urethane and quinine hydro-chloride, glucose, sodium salicylate and sodium chloride are among the ones that have been most used, but in this country the last three named have been used almost exclusively. We have found a 20 per cent. solution of sodium chloride to be satisfactory, and have used it exclusively in order to standardize our results as far as possible. This solution is easily made up in the office, can be readily sterilized, is inexpensive and produces no ill effects if used properly. In this concentration, if it passes beyond the saphenous vein it is immediately diluted by the general venous return to inactive strength and adds no abnormal blood constituent.

The patients who are to have the injection treatment are subjected to the following routine. All are treated in the clinic as ambulatory cases.

A careful history is taken and a general physical examination done. The patient should be prepared for examination of the legs in the standing position with a towel over the perineum, allowing exposure of the legs and groins. The superficial veins will become dilated in a few moments in this position. They may be brought out more quickly by application of a tourniquet or by pressure over the fossa ovale. The extent of the veins is then determined.

If desired, the Trendelenberg test can be done. For this, the patient is placed supine on the examining table and the leg raised well above the level of the body. In addition it may be stripped of venous blood by stroking it with the hands. With an examining finger compressing the internal saphenous vein near the fossa ovale, the patient is allowed to sit on the edge of the table with the lower extremities dependent. The superficial veins then fill slowly, requiring a minute or more for dilatation. The color of the limb returns more rapidly. When the valves to the deep veins are incompetent the superficial veins fill readily. It has been generally taught that obliterated deep veins and incompetent valves contra-indicate interference with the superficial venous system. We do not believe that this should always contraindicate their injection, since other channels seem to have been established. In support of this view, we have not seen edema of the lower legs or feet follow injections properly done even when the Trendelenburg test has been positive. The test seems to be largely of academic interest.

The position of the patient is very important. We prefer the upright position with the patient standing on a chair. This facilitates injection since the person making the injections may be seated. The patient's chair should be placed beside or at the end of an examining table, where one may readily sit or lie down. About 75 per cent. of patients feel faint a short time after the injections are started. This is temporary, not severe, and is readily relieved by resting or by taking a cold drink. If the injections are to be confined to the lower legs, all can be done in the sitting posture.

THE TECHNIQUE OF INJECTION

After selecting the group of veins to be injected, a tourniquet is applied above the area—usually above the knee. The entire area is painted with one half strength iodine so that general palpation may be done. Injections should start about the lower calf, proceeding from below upward. Many of the veins about the ankles and feet will reduce in caliber after obliteration of those above. A 2 cc. or 5 cc. syringe with a 25 to 29 gauge needle is introduced obliquely into the vein and blood withdrawn to insure being in the vein. Large or dull needles may cause extravasation of blood about the needle since the dilated vein walls are often very thin and friable. This makes injection of the solution unsafe. The desired amount of solution (20 per cent. NaCl) is then introduced. When the needle is withdrawn, pressure is immediately applied over the puncture and the surrounding vein, preventing leakage. This must be maintained for one to three minutes, during which time the entire portion of the vein injected can be gently massaged. The vein will be felt to thicken under the examining finger if the proper amount has been injected. There is usually a dull ache or stinging at the point injected which lasts for about a minute. If undue pain is caused or a persistent aching occurs it is most probable that the solution has been injected outside of the vein.

The amount to be injected varies greatly depending on the amount of dilatation and length of the vein in free communication with the area injected. At times large wells of blood are found that require large amounts of solution to maintain its sclerosing action against dilution with blood. Rarely the entire group on the lower leg and even in the thigh will be found to communicate freely and large quantities must be used. In small isolated varices 1-2 cc. are sufficient; in large but isolated channels 2-5 cc.

should be introduced; and in the freely communicating groups as much as 5-50 cc. can be used. In our experience, we have found that the smaller amounts suffice and we believe it is a safer procedure to use multiple injections with smaller amounts than to attempt injection of all veins from one injection site. Small rolls of gauze or cotton balls may be anchored over the needle holes with small adhesive straps. When the injections are completed we prefer to apply an elastic bandage to the entire leg beginning well forward on the foot and bringing it above the highest area injected. This is done a few minutes before the removal of the tourniquet. It should be applied firmly, worn constantly, removed and re-applied each morning. We like to keep this support for at least a week. This tends to keep the vein walls collapsed, aiding obliteration. It may also safeguard against emboli, although this danger seems negligible. Where the veins are small and the bandage is inconvenient it may be dispensed with. The patient is not limited but is told to avoid unnecessary exercise.

The number of injections necessary of course varies greatly depending on the existing conditions. Usually one to ten separate treatments are given. It has been possible to inject all the veins at one time in a few patients having veins limited to the lower legs. On an average six visits are necessary. These may be arranged to suit the convenience of the patient, since there is no particular order nor time interval necessary. We prefer to do two or three treatments weekly. After all obvious veins have been injected the patient does not return for two to four weeks, at which time the results of treatment may be seen and additional veins injected. Finally, they are asked to return for observation at the end of a year.

Patients uniformly like this method of treatment for varicose veins. It is natural to choose a non-operative treatment which does not require hospitalization nor interfere with an active life. The fear and dread of operation is removed. Then, there is a group of women who rightly dislike the appearance of dilated veins through thin stockings. Many of these would welcome relief by operation if it were not for the scars. The simplicity of the injection method with its absence of scar makes it justifiable for cosmetic reasons alone.

COMPLICATIONS

Complications arise due to two causes: first, to injudicious selection of patients; and second, to technical errors. McPheeters has carefully studied all the reported complications and fatal cases, and found the mortality rate for injection far below that for operation. Only four deaths from emboli have occurred in over 80,000 patients. The other fatal cases have for the most part been due to septicemia resulting from infection present before the injection, or to infection in ulcers produced by faulty technique. This indicates that a careful aseptic technique should be carried out as in any intravenous treatment. The group having infection already present, either in the skin or as phlebitis, are of course now excluded. A true varicose ulcer is the exception.

The most common and not infrequent complication is caused by the injection of the sclerosing solution outside of the vein. This occurs by its escape from a lacerated vein, or by its escape outside of the vein due to failure to maintain pressure over the injection site. All degrees of local reaction are seen. There may be a generalized, red, tender, and painful area which pits on pressure and is usually relieved by wet dressings, application of cold, absolute rest, and maintenance of elastic support. The skin overlying such an area may become blistered, desquamate and leave a raw, bluish-red superficial ulcer with multiple bleeding points. These we have treated by an astringent ointment or thymol iodide. They require one to four weeks to heal. The usual result of an injection outside the vein is manifested by persistent pain and a blanched tender area occurring within a few minutes. The condition described above appears, followed 4-7 days later by a dry, tough and adherent slough. This does not separate for about two weeks, after which time a crater ulcer is formed with a raised, red, irregular margin. There is little discharge unless infection takes place. Healing is delayed for 4-8 weeks. Early excision of the ulcer with primary suture has been advised and practiced by others. If extravenous injection is suspected, ulceration may be avoided by the subcutaneous injection of a generous amount of sterile water in the area. In our experience we have had the localized cellulitis a few times, but this cleared up readily. Definite ulcers have occurred seven times in four patients, one of whom had four superficial ulcers. We feel that these are avoidable and must be charged to our early inexperience with the method. There have been no fatalities. All complications are readily avoided by careful technique, making certain that the solution is confined to the vein.

RESULTS

We have been pleased with the results of this treatment although we began with the common surgical prejudice against it. We have completed a fair number over a short time, but of course cannot yet judge the incidence of recurrence. From the extensive experience of others this seems less than after operative treatment. If recurrence does occur a second treatment would not be inconvenient; this cannot be said of operation. We were not satisfied with the prolonged operations with multiple incisions to which we formerly subjected patients and we now welcome this advantageous form of treatment.

In a few instances we failed to obliterate large channels by the first injection and made a second, with the same solution with good results. Others believe this is an indication for using a more irritating solution such as sodium salicylate. This would no doubt insure success and we may later find it necessary.

While we do not wish to consider the treatment of varicose ulcer here, it is intimately related to varicose veins. If it is accepted that an important contributing factor to the production and maintenance of a varicose ulcer is venous stasis, then healing should be aided by the obliteration of all possible veins leading to and from the ulcer. This we believe is the case. The injection of these veins should be combined with stimulating and supportive treatment to the ulcer.

FRACTURES OF THE CARPAL SCAPHOID*

BY JOSEPH H. BURNETT, M.D.†

FOLLOWING a discussion, at the Boston City Hospital in 1926, as to the proper treatment for fractures of the carpal scaphoid, an end-result check-up study has been made to find out just what the outcome of treatment has been. During the period April 1, 1925 to April 1, 1928, seventy-three cases have been reported in the out-patient department of the hospital. The end-results of thirty-seven cases are now available for this report. The cases have not been selected but represent the only ones available after many inquiries.

In February 1926, a small group of cases then under treatment were shown at a clinic at the hospital as an example of conservative therapy. At that time, it seemed desirable to approve of that treatment, rather than any other, because the results were very satisfactory. Since then the pendulum has swung in the opposite direction and it would now appear that many of these cases need an operation. In this group there are thirty-three males and four females, with only one operative case. Since these figures were complied, three of the cases have been operated upon, in others operation has been recommended but to date nothing has been done.

For the purpose of this paper, these cases were grouped on the basis of good, fair and poor results:

GOOD	17
FAIR	13
POOR	7

the latter two combined totaling twenty cases that were not at all satisfactory. According to ages, twenty-two were under thirty years of age, and fourteen were over thirty years, with one age not given. That youth is not a factor in the prognosis is shown by the following figures:

	Under 30 years of age	Over 30 years of age
GOOD	8 cases	9 cases
FAIR or POOR	14 "	5 "

This would tend to show that the cases under thirty years of age do not fare as well as those over thirty years. There are four female cases, three of which are classed as GOOD and one as FAIR, all following conservative treatment.

SYMPTOMS. There is a fairly uniform range of symptoms, of which pain at the site of fracture, disability and pain on pushing, limitation of dorsal flexion, local tenderness and general weakness predominate. In only four cases was there any difficulty with the grip.

TREATMENT. All of these cases presented early were treated with the usual cock-up splint. One case was operated upon because of obvious displacement of the fragments along with the dislocation of the proximal row of carpal bones. An attempt was made to keep these cases in splints for from six to eight weeks, but as a rule this was not carried out because the patients either refused treatment or discontinued it of their own accord. Failure to carry out the treatment did not necessarily yield a poor result because some of these cases reported later with good wrists.

There are a few men who believe that these cases should be treated with palmar flexion, with the hand drawn toward the radial side. On one operative case, a checkup was made of this arrangement to see if there were any changes in the fragments. After considerable manipulation, it was found that the fragments were much better approximated with the hand in dorsal flexion than in any other position. Considerable work on the cadaver has led to the same belief. Recently at the Tufts Medical School, with Dr. David Berlin, this problem was studied on six wrists and insofar as the bony structures were concerned, the approximation of the fragments was much better in dorsal flexion than in any other position.

One of the fair results listed in this group has since been operated upon by Dr. John Adams, of the Boston Dispensary, very successfully making use of a bone graft. This is the only case, apparently, where this procedure has been performed. The other operative cases have had the usual technique of removing all of the proximal fragment, leaving a small portion of

*Read at the meeting of the American College of Surgeons at the Boston City Hospital October 12, 1928.
From the Bone and Joint Service, Boston City Hospital.

†For record and address of author see "This Week's Issue," page 149.

the distal. A portion of the distal fragment is left in because it is felt that a more stable joint will result by so doing. This, according to some writers, has led to degenerative changes in this fragment, but in the few cases here reported and others done elsewhere, this has not occurred.

CASE REPORTS

CASE I. Male, age 22, seen early, cock-up splint three weeks—treatment discontinued by patient—fair result.

CASE II. Male, age 15, injury three weeks before coming to hospital—treatment for only two weeks—very poor result.

CASE III. Male, age 16, duration one year before reporting, very poor wrist, operation recommended, so far refused.

CASE IV. Male, age 18, seen one week after injury, treatment five weeks, fair result; recently operated upon, results not yet obtainable.

CASE V. Male, age 18, injury seventeen months before appearing at hospital, very poor wrist, operation advised, not done.

CASE VI. Male, age 65, seen early, adequate treatment, poor result.

CASE VII. Female, age 50, seen early, treatment ten days, result at end of one year excellent.

CASE VIII. Female, age 65, seen early, treatment 3½ weeks, result at the end of three years, slight limitation of flexion, otherwise good.

CASE IX. Male, age 51, seen early, treatment ten days, discontinued by patient, good result at end of two years.

CASE X. Male, age 16, seen early, treatment two weeks, patient stopped treatment, good result.

CASE XI. Male, age 20, injury seven months before reporting, fair result at that time, later operated upon by Dr. John Adams with excellent result using bone graft.

CASE XII. Male, age 15, seen early, treatment for four weeks, good result.

CASE XIII. Male, age 16, injury five days before treatment, treatment five weeks, fair result.

CASE XIV. Male, age 29, seen early, operation by Dr. F. J. Cotton, removal of proximal portion of scaphoid, cuneiform and semilunar entire, marked limitation of dorsal flexion, otherwise a very good result.

CASE XV. Male, age 52, associated with dislocation of semilunar, dislocation reduced, A & P splints for four weeks, good result.

CASE XVI. Male, age 25, seen early, treatment for eight weeks, fair result.

CONCLUSIONS. In cases with obvious displacement, operate at once. Cases that have had little or no treatment and present themselves with a poor wrist, for the first time, should be operated upon; further delay is a waste of time. (This type represents a fairly large percentage of cases, most of them having been treated for a sprained wrist at home or under a doctor's care without the aid of an x-ray.) Those cases presented early, without displacement of fragments, should be treated conservatively, i. e., splinting for at least six to eight weeks. In many of these cases a good result is obtained and no further treatment other than baking and massage is required. The cases thus treated with a poor result at the end of three months should be allowed an operation if they so desire. In view of the fact that many cases do well with conservative treatment, it is only fair to explain the chances at the start and keep the operation for a future date, after the patient is convinced that the wrist is not satisfactory without it.

A GIFT TO AID DR. BLOODGOOD'S STUDY OF CANCER

Francis P. Garvan has given $10,000 to provide additions to the Johns Hopkins University for the enlargement of Dr. Joseph Colt Bloodgood's laboratory and an annual grant of $10,000 for each of the next five years for the support of the work.

Dr. Bloodgood has been contributing funds to the study of the prevention of cancer but found that he could no longer draw upon his personal resources. This gift came as a response to letters sent out by Dr. Bloodgood.

The work under way and to be continued is concerned especially with the microscopical diagnosis of cancer with the expectation that selective stains will differentiate cancer and normal cells.

The committee on standardization of biological stains, organized by the National Research Council, will co-öperate with the workers in the Johns Hopkins Laboratory.

Dr. Bloodgood has kindly furnished the following explanation of his belief and expectation.

"Until the cure and prevention of cancer is discovered by organized research, the only hope of control is through the education of the people, the medical and dental professions. We have evidence today that when the average individual receives correct information he will seek examination when malignancy can be recognized only with the microscope. We have, as yet, no instrument of precision and no laboratory test for cancer. At the present time we have not enough trained pathologists to make the microscopic tests in the operating rooms in this country. With our present technic it is a long and expensive process to train pathologists for this microscopic diagnosis in the earliest stage of cancer. Should a differential stain be discovered which will quickly separate the malignant cancer cell from the abnormal cell that is not cancer the correct differential microscopic diagnosis of frozen sections will be available to all the operating rooms of the world. It will be as simple and as certain as the Wassermann test or the differential staining of the tubercle bacilli."

THE GASTRO-CAMERA

Newspapers report that a small camera has been made which can be swallowed and thereby make pictures of the inside of the stomach. This is the invention of Franz Gerand of Vienna.

Dr. Lawrence Cremin of Ossining, N. Y., demonstrated the use of this camera on a prisoner at Sing Sing upon whom an operation had been performed for a gastric ulcer. The camera contains several films for recording pictures after illumination of the interior of the stomach by an electric light. It is expected that the early evidence of cancer of the stomach can be detected in this way and lead to early operations which may result in curing the patient.

MEDICAL PROGRESS

CARDIOVASCULAR REVIEW*

Review of the Literature on Cardiovascular Disease for the Year 1927

BY ROBERT S. PALMER, M.D.,† AND HOWARD B. SPRAGUE, M.D.†

(Continued from Page 83, issue of January 10)

(k) HEART AND PREGNANCY

Of a wealth of articles on pregnancy and heart disease the following references have been selected.

In 165 cases of the subacute or hypertensive type of toxemia of pregnancy studied by *Corwin and Herrick*, 122 or 74% showed "cardiac hypertrophy, sclerosis of the brachial or radial arteries, vascular retinal changes, or persistent hypertension after a period of from six months to six years post partum. Of these, 37% showed persistent hypertension."

Jakowleff, from a study of a large volume of material, believes that pregnant women with all varieties of valvular heart disease may go through pregnancy if failure is not of long standing and if delivery is accomplished with all care. The combination of mitral stenosis and mitral regurgitation was the worst situation in his experience. The combination of valvular heart disease with tuberculosis or nephritis is an indication for termination of pregnancy. Recent failure or failure which occurs early and resists treatment are likewise indications for termination.

Jensen and Norgaard found 39 of 239 pregnant women who showed signs of heart disease in the latter half of pregnancy. Symptoms increased until birth was accomplished and disappeared early in the puerperium. They were not relieved by digitalis. Hypertrophy and dilation were demonstrated. The authors believe that a relative insufficiency of the tricuspid valve, combined with a change in the blood supply is probably the main factor in the functional diseases of pregnancy.

Newell stressed careful supervision of pregnancy in every cardiac case. Inability or unwillingness on the part of the patient to follow an adequate safe regime is an indication for termination of pregnancy and sterilization.

As a result of 222 blood calcium determinations in a series of pregnant women, with and without hypertension; and on some non-pregnant controls, *Stieglitz* concluded that hypocalcemia is not of major significance in arterial hypertension of pregnancy.

(l) HEART BLOCK

In a patient who died after recovery from complete auriculo-ventricular block in endocarditis, *Stenstrom* found microscopic changes localized to the A-V node and bundle of His of the same nature as a fresh endocarditis, a chronic or subchronic inflammatory process, which was about to heal when the patient died.

Cleland reported a case with the unusual finding of a gumma of interventricular septum of heart giving rise to heart block which was apparent only one day before death.

Crawford described a case of acute rheumatic fever which showed a marked degree of block under digitalis. When this drug was omitted the block increased and became complete during periods; a severe degree of block continuing for fourteen days. During the influence of digitalis, epinephrin produced extrasystoles of the ventricle, but later when free from digitalis and with no block this effect was absent.

Liljestrand and Zander reported a case of total heart block in a man of 25, presumably due to infectious diseases in childhood. The patient's satisfactory response to heavy muscular work appeared to be due to increased activity of the idioventricular center.

Heard, Marshall, and Adams reported a case of heart block with convulsive syncope. Barium chloride, epinephrin and atropine were unsuccessful. "A lesion involving the functional tissues and consisting of fatty and lymphocytic infiltration of the atrioventricular node and the first part of the bundle of His together with a fibrotic process involving both left and right bundle branches was found" at postmortem.

McIntosh reports a case, a man aged 51 complaining of fainting spells or fits and pain in the head in August, 1914. The unconscious seizures occurred every three to five minutes, and lasted twenty seconds. During these he became pale. His radial pulse was irregular, twenty per minute. The venous pulse in the neck was four to six times as fast. The heart was not enlarged. Only the first sound was heard. Wassermann reaction was negative.

The electrocardiogram showed complete dissociation with a slow irregular ventricular rate. He returned to normal rhythm with relief of symptoms. He showed, however, a prolonged P-R interval.

Corwin, J., and Herrick, W. W.: Relation of Hypertensive Toxemia of Pregnancy to Chronic Cardiovascular Disease. Jour. A. M. A., 88:457, Feb., 1927.
Jakowleff, I.: Pregnancy and Cardiac Defects. Zentralblatt fur Gynäkol., Leipzig, 51:2870, 1927.
Jensen, F. G., and Norgaard: Functional Cardiac Diseases and Essential Cardiac Hypertrophy in Normal Pregnant Women. Act. Obstet. et Gynec. Scand., 6:67, 1927.
Newell, F. S.: The Treatment of Cardiac Complications of Pregnancy and Labor. Boston Med. and Surg. Jour., 197: 757, 1927.
Stieglitz, E. J.: Hypertension in Pregnancy: Blood Calcium. Arch. Int. Med., 39:465, 1927.

*From the Cardiac Clinic of the Massachusetts General Hospital.
†For record and address of author see "This Week's Issue," page 149.

In 1923, he developed gastric symptoms, (having had a gastric hemorrhage in October, 1922), plus swelling of the feet. His heart was now enlarged, his blood pressure and pulse pressure increased and there was a "to and fro" murmur over the aortic area.

He entered finally in September, 1926, twelve years after his first admission and died. Postmortem examination showed vegetation on aortic valve, scars in myocardium, patent moderately sclerosed coronaries, atheroma of the aorta and fibromyoma of the stomach. The longest P-R interval recorded was .40 seconds.

Signs of heart block after strumectomies according to *Simon* are slow pulse, superficial respiration, cough and heart block. Simon considers the etiology to be involvement of the nerve in the pathological process rather than to injury. His case was relieved by two mgs. of atropine three times daily.

Sprague and White reported eleven cases of high grade heart block under the age of thirty which brings to sixteen the total number of cases of high grade heart block or dropped beats in young people under thirty years of age. These cases were seen in the Massachusetts General Hospital in twelve years. Of eleven cases reported the etiology was rheumatic in two, other acute infections in three, congenital in one, prossibly traumatic in one, and unknown in four. All of these cases have done well except one, who died suddenly.

Gilchrist and Cohn reported two cases of varying ventricular complexes in complete heart block. Necropsy examination in one case showed the conducting tract in a sclerosed state without definite interruption in continuity.

Stenstrom reported three cases of varying bundle branch block. One case of the right type varied in degree and later showed normal Q-R-S waves. Two cases showed two to one bundle branch block, one of the right type and one of the left type. These cases are aptly compared by the author to partial auriculo-ventricular block.

Three cases of intermittent incomplete bundle branch block were observed by *Willius and Keith*. In all there was evidence of myocardial disease without endocardial involvement. Cardiac enlargement was not marked in any case; slight edema occurred in one; acute pulmonary edema occurred in two. In one case there was no clinical failure. The authors conclude that profound conduction changes may be evanescent, with or without clinical heart failure and that the electrocardiograph may be the first and only means discovering serious myocardial changes.

Barlow reviewed the literature and tabulated the cases of sino-auricular block published since 1916. He added four cases. It is a rare cause of intermittence of the pulse. Diagnosis is made by graphic records. Atropine temporarily abolishes the block. Many cases are due to digitalis, while tobacco, salicylates and infective conditions are suggested causes. The condition may be present alone but is often accompanied by auriculo-ventricular block or other signs of associated myocardial disease.

Barlow, P.: Clinical Occurrence of Sino-Auricular Block. Lancet, London, 1:65, 1927.
Cleland, J. B.: Gumma of Interventricular Septum of Heart Giving Rise to Heart Block. M. J. Australia, 1:538, April 9, 1927.
Crawford, J. H.: Heart Block in Acute Rheumatic Fever. Amer. Heart Jour., 3:196, 1927.
Gilchrist, A. R., and Cohn, A. E.: Varying Ventricular Complexes in Complete Heart Block. Am. Heart Jour., 3:146, 1927.
Heard, J. D., Marshall, W. R., and Adams, F. S.: Heart Block with Convulsive Syncope. Case Report and Pathological Findings in a Patient Unsuccessfully Treated with Barium Chloride. Am. Heart Jour., 2:562, June, 1927.
Liljestrand, G., and Zander, E.: Physiology of Heart in Uncomplicated Total Heart Block. Acta Med. Scan., Stockholm, 66:501, 1927.
McIntosh, C. A.: A Case of Complete Heart Block with Eventual Recovery of Normal Rhythm; in Association with Fibromyoma of the Stomach. Canad. Med. Ass'n Jour., 17:681, June, 1927.
Simon, E.: Heart Block after Strumectomies. Zentralb. f. chirurgie, Leipzeg, 54:2060, 1927.
Sprague, H. B., and White, P. D.: High Grade Heart Block under the Age of Thirty. Med. Clin. North Amer., 10:1235, March, 1927.
Stenstrom, N.: Recovery from Complete A-V Block in Endocarditis. Acta Med. Scandinavica, Stockholm, 67:185, 1927.
Stenstrom, N.: Further Experience on Incomplete Bundle Branch Block in Man. Acta Med. Scand., 67:353, Dec. 17, 1927.
Willius, F. A., and Keith, N. M.: Intermittent Incomplete Bundle Branch Block. Am. Heart Jour., 2:255, 1927.

4—Pathology

Bedford reported two cases of extreme dilatation of the left auricle to the right. Deviation of the esophagus was characteristic. Early in the progress, x-ray examination reveals the condition, which is almost always found in association with mitral stenosis and auricular fibrillation and usually with adherent pericardium.

The clinical diagnosis in the case reported by *Mitchell and Speckman,* that of an infant aged 19 months, was idiopathic cardiac hypertrophy with dilatation and myocarditis. The chief complaint on admission was a dry paroxysmal cough. Roentgen-ray and fluoroscopic examinations of the chest disclosed a very large heart filling the entire left lower chest. The examination was otherwise negative. About a month after the child was admitted to the hospital, the temperature became elevated, numerous moist râles developed throughout both lungs, gallop rhythm returned and the heart action and sounds became gradually and increasingly feeble. Death took place four months later. A large part of the left ventricular wall was hypertrophied, but in the region of the apex there was a sharply circumscribed area, about 3 cm. in diameter, consisting of firm, white scar tissue which extended through the entire myocardium and which was much thinner than the surrounding wall.

Taylor reported a case, a boy six years old, who died with symptoms of laryngeal obstruction. At necropsy consolidation of both upper and lower lobes and pus and fibrin in the pericardium were found. Smear and culture showed influenzal bacilli in lung and pericardium.

Ziegler, in a case of acute chorea with acute endocarditis found chromatolysis of practically all cells of the central nervous system with swelling of nuclei and eccentric displacement; destruction of some neurons, especially the sixth nerve and calcarine cortex in which glia cells were much proliferated; neuroplagia; fatty deposits in the large cells of the motor cortex and pallidum; fat in the perivascular spaces and petechial hemorrhages in a small area near the dorso-medial aspect of the restiform body of the medulla.

Pappenheimer and Von Glahn have found the lesions of rheumatic fever in the vascular septum diverse and widely distributed. The authors describe a feature which is new, namely an aortitis with characteristics peculiar to it and also they have found a panarteritis affecting the larger arteries. The patients were young without complicating lesions and had been observed clinically.

Saphir and Cooper reported a case of acute suppurative aortitis superimposed on syphilitic aortitis due to Diplococcus Lanceolatus without a demonstrable portal of entry. The acute suppurative lesion, found mostly in an aneurysmal dilatation, were found in the intima and inner media, areas not supplied by vasa vasorum but by the circulating blood.

Saphir and Scott found the earliest lesions of luetic aortitis to be an obliterative endarteritis of the vasa vasorum. Necrosis of the media is probably a secondary nutritional change. Histologically affected parts of the leaflets and aortic wall in luetic valvular disease is just degenerative and later inflammatory.

Waite found thirty-three cases of luetic aortitis in three hundred postmortems. The author states that the process may attack the aorta locally or generally. The ascending portion usually suffers most. The process is a strangulation necrosis caused by periarteritis and obliterating endarteritis of the vasa vasorum. If the condition is violent, a serpiginous ulcer is formed causing aneurysm and a vegetative growth on the intima which may cause emboli. These occur most commonly in the first portion and are due to sudden cutting off of the blood supply.

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Waite, W. W.: Lesions in Syphilitic Aortitis. Am. Jour. Med. Sci., 173:357, 1927.

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5—Physical Signs

(a) general

Goldstein and Boas assert that cardiac dilatation, often accompanied by cardiac hypertrophy, is a common observation in patients with severe anemias. Diastolic murmurs resembling those of aortic insufficiency are heard in about 10 per cent. of patients with pernicious anemia. These are caused not by organic valvular disease but by a relative insufficiency of the aortic valve. In a smaller number of anemic patients, presystolic murmurs may be present in the absence of mitral stenosis. In patients with severe anemia, the presence of cardiac enlargement, a mitral configuration of the heart, and a diastolic or presystolic murmur does not warrant the diagnosis of organic valvular disease.

Mandru theorized on the mechanism of propagation of organic murmurs of the heart and Duroziez's double femoral murmur, concluding that the propagation of murmurs and the area in which they are best heard depends upon the tension of the structure, that is whether in systole or diastole, the former state being more suitable for taking up a vibration in response to the ebb or flow of blood.

White reviews 2500 private patients referred because of cardiac symptoms to estimate the significance of apical heart murmurs. Ten hundred and fifty cases were selected having apical systolic murmurs. Seventy-six per cent. showed organic heart disease. Of these 797 cases, in 50 the murmur was transmitted to the apex. Sixty-three cases were doubtful and 190 or 18% did not have the heart as the site of disease. The louder the murmur, the greater the probability of organic heart disease and the worse the prognosis.

Two hundred and fifty cases with mitral diastolic murmurs were selected. Mitral disease was probably present in 90%, the balance being due to relative mitral stenosis. Transmission of aortic murmurs occurs in 37% of cases showing such murmurs. Thirty-six per cent. (492 cases) of present series of 1359 cases of organic heart disease were without apical systolic murmurs. Thirty-one per cent. (421 cases) of this series showed no murmurs at all.

Griffith reviews recent literature and presents his own cases, sixteen out of forty cases of pneumonia in children showing displacement of the heart to the affected side as in massive collapse. His own cases showed no evidence of atelectasis. The causes are (1) complicating atelectasis. (2) Compensating expansion of the unaffected lung.

Goldstein, B., and Boas, E. P.: Functional Diastolic Murmurs and Cardiac Enlargement in Severe Anemias. Arch. Int. Med., 39:226, 1927.

Griffith, J. P. C.: Displacement of the Heart in Pneumonia in Children. Am. Jour. Med. Sci., 174:448, Oct., 1927.

Mandru, V.: Mechanism of Propagation of Organic Murmurs of the Heart and Duroziez's Double Femoral Murmur. Annals de Med., Paris, 22:242, 1927.

White, P. D.: The Clinical Significance of Apical Heart Murmurs. Am. Jour. Med. Sci., 174:731, Dec., 1927.

(b) DISTURBANCES OF RHYTHM

The anatomy and physiology of the irregularities of the heart are taken up as are the methods of investigating them by *Wenkebach and Winterberg*. A separate volume contains tracings. The nature, diagnosis, prognosis and treatment of the various conditions are considered.

Two cases of A-V nodal rhythm are reported by *Jones and White* which present unusual variations and quite different clinical pictures. One case showed merely cardiac enlargement clinically and was investigated because of bradycardia, found when the patient was examined for epigastric difficulties which were presumably due to two esophageal diverticula and to nervousness. Bigeminy was recorded only once and that with an R-P interval of 0.2 second, which is as long as any R-P interval recorded on many of the tracings. Atrioventricular rhythm was the most constant observation, but on one occasion normal rhythm was present when the record was made in the recumbent position, while on the same day, with records made when the patient was sitting up, atrioventricular rhythm returned. On other occasions, there was a definite upright P-wave following the Q-R-S complex. It is evident that depression of the sino-auricular node was responsible for the variations found. In the second case, in which the patient was first seen six days after the onset, an electrocardiogram did not show any clear evidence of auricular activity; there was, however, an occasional bigeminy. This bigeminy persisted over a period of nine days (fifteen days after onset). Several days later there was evidence of atrioventricular rhythm at times, the inverted P-waves showing only in lead II. A record was not obtained that showed the inverted auricular complex sandwiched between two ventricular systoles.

Extrasystoles

Bourne has made a study of various factors in their relation to premature beats. "Anoxemia has no effect upon excitability but increases the rate of premature beat formation in both auricle and ventricle when it is of only moderate degree. Raised blood pressure has no effect upon auricular receptivity but has a variable effect upon that of the ventricle. It decreases the number of spontaneously occurring premature auricular beats and increases that of spontaneous ventricular premature beats. Vagus stimulation has no effect upon auricular receptivity to stimuli, when these stimuli are single and well-removed from the end of the refractory period, but possibly in some cases increases that of the ventricle.—Vagal stimulation diminishes the number of spontaneously occurring auricular premature beats and possibly increases the number of those arising in the ventricle. Accelerator stimulation has no effect upon auricular or ventricular receptivity to constant stimuli. It increases the production of spontaneously occurring premature beats in both auricle and ventricle. Alkalosis increases the receptivity of both auricle and ventricle. It probably does not decrease the spontaneous generation of auricular premature beats. The increase in the receptivity of auricular and probably of ventricular muscle to stimulation produced by adrenalin is a direct one upon the heart muscle, and is independent of any additional action upon the sympathetic nerve endings".

Bourne studied the effect of exercise, posture, amyl nitrite and atropine on the occurrence of premature ventricular beats in man, 28 cases. Exercise causes an increase in number of premature contractions in the arteriosclerotic cases only, due presumably to patches of myocardial anoxemia. In this type of case, amyl nitrite and erect posture had the same effect. In the author's opinion re-ëntry rather than parasystole explained the production of the premature ventricular contractions.

deBoer reviewed the various theories concerning the nature of extrasystoles, and commented critically upon parasystole and Scherf's "subtheory" concerning the parasystolic mechanism.

This author has been much concerned with the question of precedence in regard to theories concerning the mechanism of extrasystolic irregularities. However, he has given a very good discussion of types of probable mechanisms.

d-Irsay reviews 100 cases seen in hospital practice and makes especial distinction between unifocal and multifocal origin of extrasystoles presuming the former to be due to change in nerve force or control and the latter due to an organic degeneration.

The "multifocal" extrasystoles in the author's series showed a higher mortality and were associated with some myocardial lesion, detected either by the electrocardiograph or by autopsy. "Diseases not involving the heart are not associated with multifocal extrasystoles".

Zander reported a case showing an arrhythmia due to extrasystoles presumed to arise from two centers, one in the right and one in the left ventricle. The findings appeared to fit Kaufmann and Rothberger's theory of parasystole.

Auricular Fibrillation

Anderson believes in the use of Lugol's solution and digitalis as preoperative manoeuvre in all cases of hyperthyroidism for at least a week. Fibrillation of recent onset is restored by operation or operation plus quinidine.

Five cases are recorded by *Hay and Jones* in which fibrillation resulted from trauma; in one case the exciting factor was a powerful electric shock; in the remaining four, the exciting factor was sudden physical exertion putting an unexpected and undue strain on the heart. In four of these men there was no evidence that the heart was diseased or abnormal, and up to the

onset of fibrillation they were living active, normal lives. The authors hold that the evidence justifies the view that sudden strain may, and frequently does, initiate auricular fibrillation and induce cardiac failure in men and women with diseased hearts; in fact, that fibrillation may result from physical strain in hearts that are apparently normal, so far as can be determined by ordinary clinical methods.

Felberbaum and Finesilver observed six cases of auricular fibrillation in the course of abdominal disease usually with the acute stages. It is suggested that hidden foci may be responsible for auricular fibrillation in apparently healthy individuals.

Laslett recorded a case illustrating an article previously published in the *British Medical Journal,* of trauma as a cause of auricular fibrillation. A healthy man without rheumatic history received an electric shock while at work. He was dazed but not unconscious and noted a fluttering sensation in his chest. His radial pulse curve indicated auricular fibrillation or flutter. He was relieved in the course of one day by bromides, with restoration of normal rhythm.

Leys and Russell reported a case of persistent auricular fibrillation in a child of six. The child became abruptly ill with abdominal pain, feverishness and bouts of coughing, causing dyspnoea and cyanosis.

During 48 hours of observation the child showed (1) absolute irregularity, (2) regular tachycardia 160-170, (3) regular tachycardia 120-130 broken by extrasystoles every fifth or sixth beat. After the first few days the absolute irregularity became constant. Both quinidine and digitalis were used without effect.

Reid reported a case of auricular fibrillation in an apparently normal heart which was precipitated by an automobile accident. Two and four tenths grams (36 grains) of quinidine in one day restored normal rhythm, two years and eight months after onset of the fibrillation.

Sidel and Dorwart have urged large doses of quinidine. In their twenty cases, after a test dose of three grains, six grains five times a day were administered. If after three to five days no effect was noted, the dosage was increased. Ten grains three times daily for one day were given, and then four times daily for two days. If fibrillation continued, ten grains five times daily were given for two days and finally fifteen grains to forty grains five times daily. The drug was usually omitted if this vigorous therapy was unavailing. Thirteen of the twenty cases reverted to normal rhythm. No embolic phenomena developed. One case with unrelievable failure died of ventricular fibrillation shown by electrocardiogram.

Ventricular Fibrillation

Gallavardin has given a very complete review of the history, experimental production, clinical occurrence and treatment of ventricular fibrillation.

Gallarvardin has suggested that in certain cases, which have given evidence of extrasystoles or paroxysmal tachycardias, there may have been transitory periods of fibrillation especially if exitus finally takes place suddenly.

Auricular Flutter

McMillan's experience in twenty-five cases indicates that digitalis is more effective in restoring normal rhythm from auricular flutter than is quinidine although the latter should be tried if digitalis fails.

Willius reported a case of auricular flutter with complete heart block, the only such in 40,000 electrocardiograms and in 168 cases of auricular flutter. This very favorable variation allowed the patient to be fairly active in spite of the disturbance of rhythm.

Parkinson and Bedford recorded 52 cases of auricular flutter including histories, clinical features and follow up. The authors found that digitalis removed flutter more often than quinidine, it alone restoring normal rhythm in more than a third of the cases and in one third inducing fibrillation. One in five is restored to normal rhythm by quinidine, while a paroxysm of flutter is often cut short by quinidine. Continued small doses of quinidine do not entirely prevent recurrence of paroxysms. Quinidine was found helpful when digitalis failed.

The follow up notes in these cases indicated strongly the advisability of restoring normal rhythm if a return to work was to be attempted.

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Zander, E.: Zur Frage von der Extrasystolie als Interferenzerscheinung Mehrerer Herzrhythmen. Acta Med. Scand., 67:1, Oct. 8, 1927.

Tachycardia

Allan gives a very good summary and classification of the tachycardias and illustrates the types of electrocardiograms. The generally accepted guides to treatment in each case are given.

Howard reviews tachycardias due to digitalis and mentions Schwenson's, Felderbaum's and one of Reid's cases showing alternating or bifocal rhythm. The danger of interpreting rapid rate as auricular flutter is mentioned. The case reported showed auricular-ventricular dissociation, auricular tachycardia and ventricular tachycardia following large doses of digitalis.

Russell and *Ellison* reported a case of prolonged tachycardia associated with congenital heart disease in a child fifteen months old which showed a ventricular rate of about 300 beats per minute for several days on an end with signs of distress.

Willius has written a very complete review of paroxysmal acceleration of the heart rate.

Fischer discussed ventricular tachycardia and pointed out again the irregularity in rhythm and in shape of complexes. He holds that this represents an allorhythmia or an interference effect resulting from the interplay of two ectopic foci. His case showed at necropsy an aneurysm of the heart due to coronary occlusion. Fischer finds sphygmographic records as well as electrocardiograms valuable in differentiating the forms of tachycardia.

Levine avers that paroxysmal ventricular tachycardia may be recognized clinically by slight irregularities in rhythm of the tachycardia, a changing quality and intensity of the first heart sound at the apex and failure to slow the heart by vagal stimulation.

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Levine, S. A.: Paroxysmal Ventricular Tachycardia. Am. Heart Jour., 3:177, 1927.
Russell, H. B., and Ellison, J. B.: Prolonged Tachycardia, Associated with Congenital Heart Disease, in Child Fifteen Months Old. Lancet, 2:546, 1927.
Willius, F. A.: Paroxysmal Acceleration. Am. Heart Jour., 3:230, Dec., 1927.

(c) GALLOP RHYTHM

Conner reported ten cases of protodiastolic gallop rhythm where the third sound was loudest and was accompanied by a palpable shock. It was heard transiently in stage of beginning improvement after decompensation. With further improvement it disappeared. In a case of hypertension the loud sound shaded off ten cycles before extrasystole which came about 1-25 and appeared strong two beats after an extrasystole.

Giroux has observed a presystolic gallop rhythm which evolves from a mesodiastolic or protodiastolic gallop rhythm and which like the latter has a very sombre prognosis. He has seen it in acute infections, chronic pulmonary lesions, congenital affections of the right heart and in primary cardiac insufficiency.

A very good review of the history, theories of causation and clinical significance of gallop rhythm has been given by *Holt*.

Conner, L. A.: Unusual Form of Gallop Rhythm. Am. Heart Jour., Vol. 2, p. 514, 1927.
Giroux, R.: Gallop Rhythm and Arterial Hypotension. Rev. prat. d. mal d. pays. chauds, Vol. 7:386, July, 1927.
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6—Blood Pressure—Hypertension

Good reviews of hypertension have been given by *Elliot, Meakins and Ohler.*

Hall found as previously pointed out that the blood pressure is abnormally low in neurasthenia and psychasthenia but in prolonged mental strain or anxiety neurosis, and in a small group of psychasthenics the blood pressure may be abnormally high. Moreover this yields to treatment. The author concluded that emotional strain may play a part in the etiology and treatment of hypertension in functional cases.

Hartman, Bolliger and Doub produced experimental nephritis by deep radiation. Hypertension and hypertrophy of the left ventricle followed.

The majority of the 81 patients with malignant hypertension studied by *Keith* died within two years, 73 within fifty-one months. Necropsy in seven cases revealed extremely diffuse pathological changes.

Major and Weber's studies suggest that the blood of certain patients suffering from arterial hypertension contains something (a quinidine compound) which is present in greater amounts than in normal blood.

Curtis, Moncrieff, and Wright could not demonstrate the presence of pressor substances in the blood in hyperpiesis.

Altnow studied the changes in the eyegrounds in vascular diseases and in related conditions. There was definite retinal arteriosclerosis in 91.2% of patients with primary chronic myocarditis and in 68.2% of those in whom chronic myocarditis was secondary. The author adduces this as evidence that hypertension may be an important factor in the etiology of chronic myocarditis with and without hypertension.

Moog and Voit have recently seen sixteen patients with hypertension of 140 to 215, aged 16 to 28 years. They felt that some constitutional abnormality may be present in these cases.

Paullin, Bowcock, and Wood reviewed 500 cases of hypertension. The heart is chiefly affected, according to these authors' findings, and shows a cycle of changes: dilatation, hypertrophy, development of murmurs, cardiosclerosis, angina pectoris, disturbed rhythm, congestive failure and coronary occlusion, 137 cases seeking medical aid for one of these complications. The next most important site of compli-

cations is the central nervous system. Renal impairment occurs late and in only a small number of cases. Severe renal disease is probably primary and the hypertension secondary.

Weber suggests that polycythemia, in primary arterial hyperpiesia or in the early stages of granular kidney, may be a good sign. Cases of splenomegalic polycythemia rarely show more than a slight elevation in blood pressure. The increased viscosity of the blood dilates the arterioles and the increased blood carries more oxygen and therefore causes the heart less work except for the increased viscosity. He presents one case which did rather well.

Wigoder studied the effect on the blood pressure of patients receiving deep x-ray therapy for malignant disease. She found that the blood pressure was usually low in her subjects, that there was first a rise in pressure following treatment, then a fall to a point lower than before treatment and finally a gradual return to normal.

Mayo reported a patient ill one and one-half years with acute attacks of sudden onset, with discomfort in precordia, occipital headache, general pallor, cold and clammy skin, choking sensation followed by nausea and vomiting. The attacks lasted from one-half an hour to two or three hours. There was considerable abdominal distention on the right side aside from these symptoms. The attacks came every day to once in three days. The patient was observed to have rise in blood pressure from 120 or 130 systolic and 80 diastolic to 280 to 320 systolic and 160 to 180 diastolic during the attack with tachycardia. The capillaries of one nail bed were obliterated during the attacks. At operation a blastoma (yellowish in color suggesting suprarenal, and in morphology suggesting ganglian cells) was removed from the retroperitoneal region behind the tail of the pancreas.

Post-operatively, the blood pressure was not above 120 and the patient was much improved.

Moschowitz believes hypertension of the pulmonary circulation is common, is caused by anything increasing peripheral resistance within the pulmonary circulation, chief of which are mitral stenosis, emphysema (senile or asthmatic), infiltrating lesions of the lungs, kyphoscoliosis, patent ductus arteriosus and communications between the two sides of the heart. Arteriosclerosis in the lesser circulation in the author's opinion is secondary to hypertension here. He states the physical signs to be increased venous pressure, accentuated pulmonic second sound, dilatation and hypertrophy of the right heart, dilatation of the pulmonary conus, cyanosis, dilatation of the superficial veins (especially pectoral), enlargement and tenderness of the liver, lowered kidney function and infarction of the lungs. He believes Ayerza's disease is a syndrome developing from any lesion causing lesser-circulation, hypertension and consequent arteriosclerosis of this circulation. He finally suggests that hypertension of the lesser circulation may be the mechanism of the hitherto unsatisfactorily explained cyanosis in congenital heart disease.

A recording sphygmomanometer (Tycos) has been described by *Barr*. It is a further mechanical refinement in examination. Its chief advantage, if any, lies in giving a graphic record for insurance examinations or in cases reviewed at law.

Huber studied the systolic blood pressures of healthy adults in relation to body weight. His conclusions are "4. What little statistical significance attaches to the correlation coefficient is to be a considerable extent due to the fact that while 49 per cent. of those who are more than 10 per cent. underweight have subnormal blood pressures, only 18 per cent. of those overweight have hypernormal pressures.

5. Classifying blood presures into two classes, those over 140 and those under 110, it is shown that 22 per cent. of the former are underweight and 14 per cent. overweight. Those with hypotension are 53 per cent. underweight and 6 per cent. overweight."

Gibson describes the auscultatory gap or trau auscultatoire and reviews the literature briefly. He presents four cases and concludes that it is associated with hypertension and that it is an important source of error in blood pressure determinations.

White and Mudd have called attention to the auscultatory gap in sphygmomanometry, a phenomenon first described by Cook and Taussig in 1917. Of thirty cases collected by the authors, twenty-six showed hypertension without aortic stenosis, two aortic stenosis without hypertension and two showed both conditions.

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Wigoder, S. B.: Blood Pressure. Effect of Erlanger Treatment in Cases of Malignant Disease. Brit. Jour. Radiol., 32: 359, Oct., 1927.

TREATMENT OF HYPERTENSION

In twenty-two cases of carefully controlled hypertension, *Allen, Bowing and Rowntree* found radium chloride unworthy of further trial for the reduction of blood pressure.

Askanazy found Rhodan-Kalzuum-Diuretin or calcium thiocyanate in fifty cases of hypertension, mostly of the essential type, useful in reducing the pressure and relieving the symptoms. It was most successful in the essential, climacteric, and sclerotic forms especially if labile changes in pressure were noted. The author has discussed the theory of cholesterol as a cause of hypertension and the manner in which it is probably relieved by calcium thiocyanate therapy. *Kylin's* views concerning calcium deficiency are referred to. The possibility of essential hypertension being a manifestation of an abnormal vegetative nervous system was considered and the use of Löwenstein's Subtonin (combination of calcium, atropin, pituitrin and cholin) was mentioned.

Burnett has suggested that the effect of liver extract on the blood pressure may be due to the process of manufacture causing the histamine and choline to have a more prolonged effect and that it is not a substance elaborated by the liver. The author found that blood pressure curves, skin reactions, smooth muscle and capillary reactions were the same for liver extract and for histamine.

Blaisdell, in the management of arterial hypertension used a diet restricted to 80 gms. of protein with no sodium chloride or sodium bicarbonate used in preparation of the food or added to it and the foods were chosen from those lowest in salt—the Allen diet. Of 35 patients only a small number were reduced to normal but there was a marked lowering of systolic and diastolic pressures in nearly every case with decided relief from symptoms in all cases. In cases of high blood nitrogen the low protein diet was first instituted and then the low salt diet was started. This was to avoid precipitating uremia. After the initial elimination of salt, an attempt was made to keep the twenty-four hour urine chlorides down to 0.5 gm. although they ranged from 0.3 gm. to 0.9 gm.

Gager treated 35 cases with chemically pure potassium sulphocyanate, grains one and one-half in drams one of water, three times a day for one week, twice a day for one week, once a day for one week and thereafter daily or every other day. Pressure was reduced twenty to sixty points systolic, and to a lesser extent the diastolic was reduced. Marked renal insufficiency is a contraindication.

The author in the same paper analyzes a series of 2000 cases equally divided between the sexes. He quoted Vollhard: "the single etiological factor in high pressure of which there is no doubt is age."

Lörcher found that rhodapurin not only reduced the pressure of the majority of his cases of essential hypertension but it also improved their symptoms. The vasomotor type were most helped by this treatment.

Lukin discussed the management of essential hypertension and described a regimen based mainly on high animal protein diet with fruits and considerable amounts of coffee. He eliminates hot baths and substitutes showers. Lukin discussed laboratory and empiric observations which uphold this method.

O'Hare considers the disease familial and occurring through stages (1) pre-hypertensive, (2) with varying tension, (3) established hypertension, arteriosclerosis and cardiac hypertrophy, leading to (a) cerebral arteriosclerosis and cerebral hemorrhage, (b) angina pectoris or congestive failure, (c) uremia, (d) diabetes.

Hypertension depends on (a) condition of heart muscle, (b) degree of sclerosis, (c) viscosity of blood, (d) vaso-constriction or dilatation. We can treat only the vaso-constriction.

Drugs: (1) Bromides, (2) iodides (especially with positive Wassermann), (3) Ca Cl_2 with atropine, benzyl benzoate, akineton, gui, nitrites (angina), (4) digitalis (pill) (no contraindication), (5) salicylates (headache), Intrait de Gui (headache, vertigo, and other cerebral symptoms), (6) warm baths, sweats (with care not to overtax circulation, (7) organ extract—liver, parathormone (8) hot drinks, coffee, tea, milk, (9) relaxation, naps, philosophy.

Stieglitz treated about 140 cases of hypertention with bismuth subnitrate from 5 to 9 grains three or four times a day. It seemed to be a valuable auxillary to other measures. Presumably it exerts a more prolonged effect than the nitrites. The effect is produced supposedly by the slow liberation of nitrite ions.

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HYPOTENSION

Bradbury and Eggleston's case of postural hypotension did not show at autopsy any signs indicating suprarenal disease or status thymo-

lymphaticus. Unfortunately the brain and spinal cord were not permitted to be examined.

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7—Vasomotor Disease

Peripheral Vascular Disease

Fleming and Naffziger believe that transient hemiplegia is due not to cerebral vascular spasm but to temporary cerebral anemia.

Leriche and Fontaine found that vessels deprived of nerves usually called vasomotor are not paralyzed. The authors hold that motor innervation of vessels is assured chiefly by intramural, peripheral centers.

Allen and *Brown* point out that to differentiate the vasomotor and the organic types of vascular disease in the extremity it is necessary to recognize the frequent association of the two. The authors give their general classification (see table).

"Vasomotor disturbances of a spastic type simulating Raynaud's disease frequently occur in extremities in which there is conclusive evidence of organic vascular obliteration of the type characteristic of thromboangiitis obliterans" and these may be an early sign of obliterative vascular disease. "The presence of diminished or absent pulsations in the palpable vessels indicates an organic or occlusive vascular lesion. The symptoms of vascular occlusion (excessive fatigue or the pain of claudication) phlebitis or color changes with change of position are confirmatory of the diagnosis of an obliterative lesion. These findings do not occur in the functional or vasomotor disturbances."

The authors have found the study of the magnitude of vasodilation possible in determining cases suitable for lumbar sympathetic ganglionectomy.

Allen and *Brown* state that "in approximately 5% of the cases of thromboangiitis obliterans at the Mayo Clinic the pulsations of the dorsalis pedis and posterior tibial arteries were normal. The signs of vascular obliteration were confined to the distal part of the foot and toes. Lumbar sympathetic ganglionectomy will produce less vasodilation and be of less therapeutic value in this type of case than in Raynaud's disease".

Classification of Arterial Vascular Disease

Functional or vasomotor types	Local distribution	Vaso constrict.	1. Multiple phase color reaction: Raynaud's disease. 2. One phase color reaction; acrocyanosis, dead finger, local syncope.
		Vaso dilating types	Erythromelalgia.
	General distribution	Vaso constrict.	Primary or essential hypertension, early stages.
		Vaso dilating types	Primary or essential hypotension.
Organic types	Local distribution	1. Arteriosclerotic with or without thromboses, diabetic gangrene. 2. Thromboangiitis obliterans — Buerger's disease. 3. Simple thromboses or embolism. 4. Aneurysm with or without thrombosis.	
	General distribution	Arteriosclerosis 1. Primary. 2. Secondary to hypertension.	

Constam found that four cases of 94 cases of Buerger's disease had primary involvement of upper extremity. It is a thrombolic process with localization and with fibrosis of vessel walls.

Diagnosis in Raynaud's depends upon:

1. Pulseless vessels (main vessels pulsate).
2. Signs of vascular insufficiency.
3. Vasomotor phenomena.

Wheeler reported two cases of thromboangiitis obliterans. Neither case was helped by periarterial sympathectomy, neither had syphilis, or was a Jew. Both used much tobacco.

Silbert pointed out that there are many treatments for Buerger's disease for all of which success is claimed. Of 155 cases the author found that 77% lost at least one extremity in five years. 12% of 84 cases came to amputation in a series on whom hypertonic salt intravenously was used. The cessation of smoking is the most important measure to be instituted.

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CAPILLARIES

Crawford studied twelve cases of aortic insufficiency in which microscopic capillary pulse was observed by means of simultaneous electrocardiograms and cinematography of the nail bed capillaries. He could discover no evidence to indicate that pulsation in the capillaries was due to the heart beat.

Crawford has studied the capillaries of the nail fold by cinematography. He found that changes in the diameter of the arterial and venous limbs of the capillary loop take place from moment to moment and are of equal magnitude. The extent of these changes varies in different loops; individuals vary. The magnitude of variation depends upon the state of compensation and not upon pulse rate. The cause of their production is uncertain. In cases of decompensation the flow is slow and irregular, comparable to cases of auricular fibrillation with the same degree of decompensation.

Harris obtained an alcoholic extract of human skin containing a "substance that flushes and wheals the human skin when punctured into it". This substance or this extract causes contraction of the guinea pig's uterus and is probably histamine.

Lewis has summarized in book form the researches to date on blood vessels of the human skin and their responses to various stimuli.

Lewis, Grant and Marvin have concluded that "certain forms of physical stimuli provoke vascular reactions in the skin by releasing locally a chemical substance that acts directly on the vessels and nerve endings." "The sensory nerve endings that receive the stimulus responsible for the flare (reflex flare)," the authors have stated, "are only known to be stimulated by histamine introduced, or by its equivalent released from the tissues. It is suggested that the nerve endings in question are specifically adapted to this form of stimulus."

Again *Lewis* and *Marvin* stated that a skin reaction consisting of local reddening, whealing and a widespread flare, or when it presents local reddening associated with blistering, the vascular reactions are the result of the release of a histamine-like substance in situ. . . . Antidromic impulses passing along sensory nerves causes vasodilatation by releasing a vasodilator substance from the tissues which the sensory nerve supplies."

Lichatschewa stated that human blood contains both vasodilating and vasoconstricting substances which normally balance each other. Normal blood when allowed to stand a few hours contains a vasoconstricting substance in preponderance as does blood from patients with various cachectic conditions. In croupous pneumonia, on the other hand, during the crisis there is an over-balance of the vasodilating effect.

Volterra in an earlier work showed that capillaries have an adventitial layer which is an integral part of the capillary wall and that the cells of the capillary are not contractible. The author thinks dilatation is caused by vagal action producing liberation of potassium ions, acidification and swelling of the adventitial colloid. Sympathetic action, on the other hand, results in liberation of calcium ions, alkalinization reduction of swelling, and contraction of the capillary.

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8—Symptoms

Fraser, in the third Goulstonian lecture of 1927, on cardiac dyspnoea gives an illuminating discussion of cardiac asthma. He calls attention to several experimental observations in support of the theory that increased respiratory effort in the presence of mechanical difficulties or in response to stimulation from the respiratory center causes an increased blood flow. The right heart the reserve of which is greater than the left in these cases (arterio-sclerotic, hypertensives and "cardio-renals") increases the flow through the pulmonary circuit but this is turned back upon the left heart already at the limit of its reserve. There is thus an imbalance between the two sides of the heart and pulmonary edema results. The experimental support of this theory is as follows.

Fraser suggests as a cause for the onset of vigorous respiratory ventilation vascular constriction of the vessels of the respiratory center, as proposed by Hofbauer, edema of bases of lungs and reduced vital capacity when recumbent, coronary thrombosis or abnormal rhythm. He might have added the fact that the blood flow recumbent is increased. The interesting

corollary of this theory is that morphia relieves by depressing the respiratory center, reducing blood flow and allowing the left ventricle to recover, in short restoring the balance. A further support of this hypothesis is the fact that the blood is fully saturated with oxygen during a paroxysm of cardiac asthma and after relief by morphia it is distinctly under the normal lower limit of oxygen saturation. Morphia thus might be combined with an effective method of oxygen administration.

Kahn holds that there are two forms of cardiac dyspnoea. "One depends upon stasis in the pulmonary circulation associated with right ventricular deficiency for which I suggest the name 'pulmonary asthma'. It also develops in the late stages of left ventricular failure. The other depends on deficiency of the left ventricle alone, with irritability of the respiratory center producing reflexly attacks of paroxysmal dyspnoea.—Pulmonary asthma and paroxysmal cardiac dyspnoea frequently coexist during the advanced stages of myocardial degeneration.

Dumas has also noted that left ventricular failure occasionally gives rise to cerebral symptoms such as syncope, convulsions, and coma especially in cases showing pulmonary edema and these cerebral symptoms may dominate the picture. Such symptoms may arise with a fall in tension in hypertensive patients.

Von Korányi has discussed the question of shifts of body fluids in a compensatory way in the presence of heart disease. Fluid imbibed or fluid resorbed from transudates or edema is a load on the circulation which must be taken care of and the mechanism for this is probably in the use of the liver as a reservoir. He concludes that cardiac asthma is due to failure of the left ventricle and one should treat it by stimulating the left ventricle or by limiting the return of blood to the right heart by regulating fluid intake, by the use of diuretics and by venesection.

This author points out the danger of the free use of morphia in cardiac asthma especially when used prophylactically. The cardiac asthma when it comes after a long morphine sleep is inclined to be worse, due, the author thinks, to a prolonged resorption of hypostatic edema. He guards against this by frequent recumbent positions during the day.

Other discussions of the pathogenesis of cardiac asthma have been given by *Wiechmann and Löer* and *Singer*.

Brunn found that pituitrin injected relieved cardiac asthma promptly, even when it was accompanied by anginal pain. Pure angina pectoris on the other hand was made worse or at least not improved by this treatment.

Singer has given a very good review of the therapy in cardiac asthma. First he stresses suggestion and mental control for nervous patients suffering from this disease. Like Eppinger, Von Papp and Schwarz, he has found pituitrin intramuscularly of striking benefit early in an attack. Eppinger et al. hold that the vasoconstriction in the periphery reduces the blood flow and exercises the favorable effect in this way while Brunn and Wassermann think the cerebral vasoconstriction exerts some influence on the nervous centers which relieves the paroxysmal dyspnoea.

Singer considers the nitrates as aids in the treatment and by no means as effective primary agents. The usual digitalis preparations are powerless in an acute attack but intravenous strophanthin has been used with success by him when a patient has been unconscious from an attack. Digitalization is recommended for continued use in the prevention of attacks. Oxygen inhalations he has not found successful. For a general regime, Singer digitalizes and prescribes caffein and morphia at bedtime with further morphia at the first sign of an attack. Fluid reduction according to the theory of Brunn is vigorously pursued. Salyrgan, a mercurial diuretic is used even if no edema is apparent, fluids are reduced to 800 to 1000 cc. including water containing foods. The salt intake is allowed up to normal limits.

Danzer compressed by blood pressure cuffs, the four extremities for ten to twelve minutes with definite relief in five minutes in cases of cardiac asthma. This procedure presumably unloads the heart sufficiently for recovery to take place. This treatment when applied every two hours was of some benefit in advanced congestive failure though digitalis was finally required. Danzer finds support for this method of treatment in the work of Eppinger, Von Papp and Schwarz referred to above, namely, the discovery that blood flow or blood return to the heart is increased during a paroxysm. He also mentions in this connection, the finding of Harrison and Leonard that digitalization decreased the minute volume output of the dog's heart. Thus the venous stasis method and digitalization would seem to have similar modes of action. However, it should be recalled that Harrison and Leondard's work was on normal dogs and that these workers did not take into consideration the reduction in heart size which takes place in digitalization of pathological hearts in congestive failure as Cohn, Stewart and Gilchrist have pointed out.

Hirsch and *Capps* reported a case subject to sudden attacks of dyspnoea and unconsciousness with extreme cyanosis. Other symptoms of adrenal insufficiency were present. Post mortem examination showed no lesion other than thromboses of the suprarenal veins. The authors suggested that the suprarenal glands may play a rôle in the utilization of oxygen and that insufficiency of these glands rather than heart failure may have been responsible for the cyanosis.

Meakins examined the distribution of jaundice in circulatory failure and concluded that there

probably are two types of jaundice in circulatory failure, hemolytic and obstructive.

Myers, in his study of 1000 cases referred to above, found the precordial location of pain was higher in those without heart disease; sharp to severe pain was more common in heart disease, aching pain was more common in those without heart disease. In regard to palpitation, he found rapid beating more commonly occurred in those without heart disease. Forcible beating on the other hand suggested heart impairment. Two thirds of the persons with heart disease suffered from breathlessness and one-fourth of those without heart disease complained of it. Edema of the feet he concluded is erroneously reported by patients or is on occasions due to causes other than the heart and is therefore an unreliable symptom.

Fraser discusses hyperpnoea and dyspnoea and the various physiological structures and the blood gas factors involved. From a study of the arterial blood in a variety of dyspnoeic cardiac patients he concluded "that oxygen deficiency in arterial blood or deficient oxygenation of the blood in the lungs is not present with any consistency in cases of cardiac dyspnoea". It is found when pulmonary disease is present in the presence of gross congestion and edema of the lungs in feeble or dying patients. The normal oxygen saturations are presumably due to increased ventilation and this is due to a deficiency in the oxygenation of the arterial blood primarily.

The study of the arterial blood in the same cases of cardiac dyspnoea considered in the first lecture resulted in the conclusions: "(a) In cases of extreme congestive failure and of pulmonary disease in addition to heart failure, faulty elimination of carbon dioxide and faulty absorption of oxygen in the lungs may be factors in the production of increased respiratory activity. (b) In cases near death, retention of fixed acids and raised hydrogen ion concentration may be factors in the production of increased respiratory activity, but (c) in cases of cardiac dyspnoea other than these the condition of the arterial blood cannot account for the dyspnoea and is indeed indicative of the presence of increased pulmonary ventilation to which the changes in the blood are secondary." One supposes "that there is a cause of increased respiratory activity present in all cases of heart failure, which is independent of the quality of the blood supplied to the respiratory centre.

Nineteen cases of paroxysmal tachycardia were studied by *Barnes and Willius,* in which the pain was similar in type and location to that seen in cases of angina pectoris. The pain is chiefly distinguished from that of angina pectoris by the absence of the relation of the pain to factors which precipitate attacks of angina pectoris, and also by the fact that the painful seizures tend to occur over a long period of years without a serious outcome. The diagnosis rests on the demonstration of evidence that the pain is an accompaniment of attacks of paroxysmal tachycardia. In contrast to the pain of angina pectoris, except that which occurs in coronary occlusion, the pain in paroxysmal tachycardia has a much longer duration as a rule. Treatment of the pain which occurs with attacks of paroxysmal tachycardia consists in measures which have as their objective the control of the paroxysms of rapid heart action.

Capps concluded from his experimental and clinical study that "The presence of pain with pericarditis usually indicates the involvement of the tissues outside the pericardium, especially the pleura. Pleurisy is a common complication of the pericarditis in pneumonia and rheumatism, whereas it is infrequent in the pericarditis of nephritis and other terminal diseases. This probably explains the painless character of the nephritic pericarditis and the relatively painful picture commonly attributed to the rheumatic type."

Five cases are reported by *Schwartz* of young adults between the ages of 16 and 20, suffering from chronic rheumatic valvular disease, whose main presenting symptom was severe paroxysmal cardiac pain during a certain critical period. All of these patients had an antecedent history of rheumatic fever and all showed multiple valvular involvement of the heart of some duration. The paroxysmal attacks of pain were mainly nocturnal in type and were accompanied by increased pulse rate and respirations, marked rises in blood pressure, violent pulsations of the vessels of the neck, severe headache and variable vasomotor phenomena. The onset of these attacks was always during an afebrile period, and came on from one to twelve years after the first signs of rheumatic fever. The recurrences of cardiac pain were observed to occur during a period of from nine months to one year in four successive patients. In a fatal case they were noted one month prior to death. Four of the five patients are living, several years after the "crucial period", free from all symptoms of pain. Such periods of recurrent precordial pain in young patients with chronic rheumatic cardiac valvular disease do not in themselves indicate a poor prognosis as to life.

Wedd has commented pointedly upon the abdominal symptoms given by coronary disease by referred pain, the symptoms in the abdomen due to passive congestion especially as the result of auricular fibrillation and the acute symptoms resulting from infarction of the spleen in subacute bacterial endocarditis. He reported three cases in which laparotomy was performed.

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9—Electrocardiography

A report by *Becke, Johnson, and Harris* bears on the nature of the T-wave in the electrocardiogram. Injection of caffeine and epinephrine causes a myocarditis in rabbits, and the authors show that this myocarditis causes changes in the electrocardiogram. The main change consists in an alteration of the T-wave. The lesion in the base of the left ventricle is apparently the only myocardial change necessary to produce T-wave changes. An auricular lesion produced experimentally suggests that amplification of the negative current produced in rabbits' hearts may perhaps show a change in the P-waves which was not observed in these experiments. Pericarditis does not cause an alteration of the electrocardiogram. It does not appear likely that endocarditis causes a change in the electrocardiogram, nor does a small abscess in the myocardium influence the electrocardiogram.

Borman and McMillan reported the experimental destruction of the sinoauricular node of the dogs heart by radon. When histologically the node was destroyed this was not necessarily apparent electrocardiographically. It may be there is nodal tissue too minute to be detected and that this gives the normal electrocardiogram or intact surrounding cardiac tissue may initiate normal impulses. Changes which may be produced by exposure of the node to radon "are sino-auricular block, nodal rhythm and possibly coronary sinus rhythm".

Burnett and *Piltz* have stated their opinion that the conservative standard of no deflection over 5 mm. set by Sprague and White for electrocardiograms of low voltage is too low and that deflection of 8 mm. even in only one lead may be a sign of cardiovascular disease.

Craib has attempted to correlate the initial and final phases of cardiac muscle excitation with the modern theory concerning the behavior of electric forces, the "doublet" theory. This author found the initial short Q-R-S phase of the electrocardiogram analogous to the discharge of a highly specialized electric cell and the later more prolonged T-wave phase analogous to the recharge of the cell or its restoration to its previous potential energy. These are katabolic and anabolic respectively and from the point of view of the theory represent two electrical fields external to the muscle element but definitely related to it, the orientation of the second being reversed. The author states "The movements of the ions in the cell being reversed during these two processes, the associated electric fields will also be reversed in direction."

The elimination of effects of alternating currents on the string galvanometer has been accomplished by *Felberbaum* through the introduction of a simple fixed condenser in the string circuit of the electrocardiograph. This filters the currents induced through the patient by elevators, x-ray machines and telephone lines and does not change the resistance of the string.

Of fifty cases of bronchial asthma and emphysema reported on by *Kahn*, ten showed electrocardiographic evidence of right ventricular preponderance. The remaining cases either did not show preponderance electrocardiographically or showed left ventricular preponderance in about equal number. Among these, a large proportion of cases showed hypertension and aortic atheroma—factors which influenced the hypertrophy of the left ventricle to a degree sufficient to mask the electrocardiographic evidence of right ventricular hypertrophy. Four of the cases showing right preponderance also showed high P_2 and P_3. Inversion of the T-wave in Lead III did not show any particular relation to the ventricular predominance.

Lueg investigated the electrical resistance and the polarization capacity of the human skin by means of over one thousand tests on many patients. Temperature of the solution of indifferent electrode and area of contact made very little change in the resistance or capacity. No internal disease affected the capacity, not even edema except very slightly in one case. Skin diseases and thyroid disease on the other hand did affect the skin capacity. The capacity was doubled in hyperthyroidism and it was markedly decreased in myxedema.

As a result of their researches, *Pearcy* and *Howard* have concluded that "stimulation of abdominal viscera produces reflex sympathetic activity of the heart. In the normal animal and man this sympathetic activity is not detectable electrocardiographically. When the heart is poisoned by drugs, such as barium chloride or digitalis, this sympathetic activity is manifested electrocardiographically by elevation of the T and decrease in the R to end of T interval."

Wells found that the electrical resistance of the skin was reduced by measures producing vaso-constriction of skin blood vessels and conversely vaso-dilatation raised skin resistance. The reason for this is not clear, the fact that new blood corpuscles have a relatively high re-

sistance will not explain the phenomenon entirely.

Densham and Wells concluded after further studies that the mechanism by which electrical resistance of skin is altered is by "unequal tension exerted by the vascular loops of the corium on the epidermis when they contract or dilate."

Willius and Killins studied 140 cases showing electrocardiograms of low voltage. All cases showing associated abnormalities were excluded. Cardiac disease predominated in 32%. Sixty-eight per cent. comprised various types of disease. In the latter group, cardiac mortality was 2% while in the former group it was 30%. The authors conclude that low voltage electrocardiograms apart from other changes do not indicate serious myocardial change nor do they justify a serious prognosis.

Dock found the cathod ray oscillograph suitable for recording electrocardiograms and especially useful for his purpose in connection with rapid roentgen ray films of the heart. This mechanism is not too delicate to be damaged in the x-ray room.

Keyes calls attention to a bit of technique for prevention of curling and cracking of electrocardiographic prints. After washing the prints are squeezed to remove excess water and are then immersed in a solution of glycerine 20% in distilled water 80%. Five minutes is sufficient. The print is then removed and hung up to dry. If a high gloss is desired the print should be squeezed again, this time on a ferro-type plate which has been previously polished with regular ferro-type cleaning solution (paraffin and benzene). Prints thus treated will not crack or curl. The glycerin bath does not deteriorate and may be used indefinitely.

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(To Be Continued)

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15031

DERMATITIS AND DROWSINESS

MEDICAL DEPARTMENT

An unmarried English nursemaid thirty years old entered May 24 complaining of inflammation of the skin of one month's duration. She was very drowsy. The history was obtained in part from her sister, in part from the dermatologist who sent her in.

Six months before admission she began to have frequent head colds, to menstruate every two weeks, and to have pimples during catamenia. Since the onset she had been losing weight. These symptoms continued four months before she consulted a physician. Under his treatment she felt better for a while, and the skin condition improved. After two weeks, however, she felt weak, tired, and had no appetite. Her skin at that time was clear. Four weeks before admission she had generalized itching, weakness and loss of appetite and sleep, and an eruption of dark red pin-head sized spots on the arms, neck and face. Her temperature was 102°. A diagnosis of measles was made, though she had no cough or coryza. She was in bed for a week with fever, which gradually quieted down. She was up and about for a while. A week before admission she began to have considerable oozing about the neck and axillae. This persisted until May 12. A later history showed that on April 6, thinking she was pregnant, she had a curettage performed. From this time she felt very badly. She took medicine by mouth, but had no injections. Two weeks before admission she felt much worse, and entered another hospital. On admission there she presented a picture of a generalized exfoliating skin condition with marked crusting, oozing and swelling about the face, neck, arms, hands and axillae. Under treatment this gradually subsided to the dry exfoliative stage in which she entered the Massachusetts General Hospital. She had the same bronzed color which she had on admission here. She ran a temperature reaching 104° for the first week. Her elimination always remained low. She had nausea. For the past week she had had many loose movements and cramps in the abdomen. No microscopic blood or pus was found in the stools. She became more stuporous and passed smaller and smaller amounts of urine.

Clinical examination showed an emaciated and very drowsy woman lying in bed. The breath had a sweetish odor. The skin was dry and brownish throughout, and showed extensive exfoliation. The sclerae and conjunctivae were injected. The base of the right lung posteriorly showed diminished resonance, breath sounds and voice sounds. The heart showed no enlargement to percussion. The apex impulse was not seen or felt. The action was rapid. The sounds were not of good quality. The blood pressure was 95/65. The abdomen was distended and tympanitic. The liver edge could not be felt because of tenderness and a suggestion of spasm in the right upper quadrant. The upper edge of liver dullness was in the 7th space. Both labiae were swollen. All the extremities showed coarse tremor due apparently to weakness. The pupils were normal.

Urine: amount 5 to 35 ounces, specific gravity 1.012 to 1.013 at all of 6 examinations, cloudy and alkaline at all, a trace of albumin at all, red cells and leukocytes at three, loaded with both at one. Arsenic determination test on the urine showed no arsenic. Blood: 11,500 leukocytes, polymorphonuclears 76 per cent., hemoglobin 60 per cent., reds 3,270,000. May 28 non-protein nitrogen 300, blood sugar 196 milligrams, blood chlorides 605 milligrams; May 31 non-protein nitrogen 230, blood sugar 117, creatinin 12.0 milligrams. Smear from throat negative. Stools negative.

Temperature 98° to 100.3° for the first two days; then 96.5° to 99°, with a terminal rise to 103.5°. Pulse 90 to 130. Respirations normal except for a terminal rise to 40.

After a subpectoral of 2000 cubic centimeters of glucose in saline the patient felt and appeared better. The pulse was stronger. She voided only once in the first two days. She was catheterized and an ounce of clear urine withdrawn. May 26 she was given a second subpectoral. She felt much better, was less drowsy, passed more urine and had less diarrhea. The blood pressure was 110/70. There was cavernous breathing above the level of dullness at the right base. A medical consultant suspected pathology at the right base and asked for X-ray examination. He found an apical systolic murmur and a systolic with a high-pitched diastolic at the base, but found no evidence of pericardial effusion. X-ray examination showed some decreased radiability of the right base. The diaphragm however was visible. The costophrenic angle was clear.

June 4 the patient went into coma, was incontinent, and showed considerable twitching. A subpectoral of 1600 cubic centimeters was given with no subjective improvement. The coma deepened, the twitching increased, the temperature, pulse and respirations rose. June 6 she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

I do not see how we can tell about the measles. It does not sound like it in the absence of any catarrhal symptoms.

The outstanding facts are the skin condition, which sounds like an exfoliative dermatitis of the type we often get after a dose of salvarsan or other poisons, plus an increasing drowsiness, with deficient excretions. I have not paid any special attention to the brown color of the skin because that is so common in cases of this dermatitis. The blood pressure was notably low, which with the brown color, which I have just said is of no importance, might make us think of Addison's disease. We must watch for other evidence of this as we go on.

NOTES ON THE PHYSICAL EXAMINATION

They are looking carefully as to the size of the liver in relation to the possibility of an acute hepatitis, which often goes with exfoliative dermatitis as a result of an overdose of salvarsan, but ordinarily accompanies a jaundice which has not as yet been mentioned and I suppose was not there.

Of course we cannot tell much about the statements as to the urine because we do not know whether these are catheter specimens. The apparent fixation of gravity is important, although fixation at that point is not so important as at a lower point.

Arsenic was not being excreted at this time, which only shows probably that it had not been given very recently.

A non-protein nitrogen of 300 certainly ought to mean something. That is not healthy. The creatinin ought to be from one to two. It is greatly increased, as is the non-protein nitrogen.

She was here two weeks. She had a good deal of normal temperature. I doubt whether the breathing was cavernous. That is just a question of fact. It does not seem likely there was a cavity there, and we do not get the cavernous breathing under other conditions.

From the X-ray report there probably was no fluid in the plurae.

DIFFERENTIAL DIAGNOSIS

This is the picture which for so many generations has been known as uremia. We do not know to-day just what we mean by uremia from the pathological point of view, but we still continue to use the term for this clinical syndrome with the implication of a nephritis as its cause. It seems to me we have no reason to doubt the diagnosis of a severe nephritis, though we have a low blood pressure. The only other thing in my mind is the lesion we had a week or two ago, nephrosis or tubular nephritis, which can perfectly well come in a case presenting the facts that are given here. Nephrosis does not usually raise the non-protein nitrogen, and the fact that this is so very high makes me think that the glomeruli are affected,—that it is not merely a tubular process.

I suspect then that the patient had taken some poison, perhaps arsenic in the form of salvarsan, that led to an exfoliative dermatitis and nephritis. I do not think we have any good evidence of hepatitis, although that is possible.

What is this lesion at the base of the lung? I do not know, unless it is a pneumonia. I do not know just how that plate corresponds in time with the temperature.

So it seems to me that some obstructive type of kidney lesion ought to be found, and I believe it will be not nephrosis but nephritis. That is, it will not be confined to the tubules. We have no evidence of cardiac hypertrophy. We have a little evidence of a terminal pneumonia on the right. That is all that I can say.

A Student: Acute endocarditis?

Dr. Cabot: I am glad you brought that up. There is a high-pitched diastolic murmur at the base. That ought to be due to a definite valvular lesion, acute or chronic. We do have functional diastolic murmurs, but ordinarily with very much more anemia than there is here. They occur chiefly in intense anemia. This is not intense, only moderate, and I do not believe it is a functional murmur. The question is whether this report is a mistake. But if the murmur was really there I think it is a case of acute or chronic lesion on the aortic valve. It looks more like an acute lesion.

A Student: Do you ordinarily get purpura with arsenic? Does it ordinarily give that picture of acute exfoliative dermatitis?

Dr. Cabot: Not so far as I know.

A Student: Is it possible that this might have been scarlet fever?

Dr. Cabot: I think not. This type of dermatitis never follows scarlet fever so far as I know. We have to pay some attention to that, and I should say we have very little evidence in the history to make us think of scarlet fever.

A Student: How similar is this to a severe smallpox?

Dr. Cabot: I have had very little experience with acute smallpox. I should say it is not like it at all. We do not hear of pustular lesions. We should have pustular lesions in severe smallpox.

A Student: Can this be a purpuric condition?

Dr. Cabot: At the very beginning I thought of that owing to the presence of red spots, but later they do not say anything that suggests that.

A Student: Does it look like mercurial poisoning?

Dr. Cabot: We cannot exclude that.

A Student: Would you consider tubercu-

losis,—tuberculosis of the kidney and adrenals, thereby producing Addison's disease?

DR. CABOT: I have never seen that combination. I do not think tuberculosis of the kidney ever gives this urinary picture. But I think we ought to consider Addison's disease a little further. We diagnose Addison's disease on the basis of changes in the skin, low blood pressure, and certain gastric and cardiac symptoms, especially fainting and vomiting. Pigmentation inside the mouth is the most reliable physical sign. Here we have nothing except pigmentation and one rather low blood pressure, the other being within normal limits. And we have good reason to explain the pigmentation of the skin from the other skin lesion which she has. So I should say I do not think we have to consider tuberculosis of the adrenal here.

A STUDENT: How often do you get tuberculosis of the adrenals? Ward mentions only seventeen cases.

DR. CABOT: It must have become more common since that time. I think we have seen a dozen cases in these exercises. It is not a rare condition.

A STUDENT: What would be your choice between mercury and arsenic poisoning?

DR. CABOT: I think it is arsenic. In mercury poisoning generally there is more evidence of intestinal and gastric irritation. There is a little diarrhea here, but not very much. I do not know any way in which mercury can be excluded, but I have seen this condition much more often with arsenic.

A STUDENT: Wouldn't mercury give stomatitis?

DR. CABOT: Yes.

A STUDENT: Is there any suggestion of lues?

DR. CABOT: I do not see it. I do not know why she took salvarsan; but lots of people do take it.

A STUDENT: It says "four weeks before admission she had an eruption." What was it?

DR. CABOT: I do not know what to say about that.

A STUDENT: Is there any possibility of a streptococcus infection?

DR. CABOT: As I said, I think if we take the statement as true, of which I am in some doubt, that that diastolic murmur was really there, then it has to be a lesion on the aortic valve; an acute lesion seems more probable than a chronic one, and an acute lesion would probably go with a streptococcus infection.

A STUDENT: Might not the skin lesion have been eczema?

DR. CABOT: I do not know enough about eczema to say no. The difficulty is that people do not die of eczema, so far as I know, and that eczema does not go along with severe kidney lesions which we certainly must suppose in this case, whereas exfoliative dermatitis does. A large book could be written on what I do not know about the skin, but I think we can exclude eczema here.

A STUDENT: Is the nephritis secondary to the poison?

DR. CABOT: I think so, yes.

A STUDENT: It would be tubular then.

DR. CABOT: How about that, Dr. Mallory? Can't we get any other kind of nephritis except tubular from arsenic?

DR. TRACY B. MALLORY: So far as I know there is no characteristic form of nephritis due to arsenical poisoning.

A STUDENT: Doesn't the brown color of the skin suggest hepatitis or liver involvement?

DR. CABOT: I do not see why.

A STUDENT: Hepatitis suggested by the brownish color, the tenderness and the spasm.

DR. CABOT: No, I do not think that is enough to make me think of hemochromatosis. A brown color has ordinarily no connection with the liver except when there is diabetes, which we have no reason to suspect here.

A STUDENT: Would not the failure to find arsenic in the urine rule out arsenic poisoning?

DR. CABOT: No. The arsenic might have been otherwise excreted and there might not have been any coming out by the urine at this time.

A STUDENT: Is there any ground for considering peritonitis?

DR. CABOT: I do not see it.

INTERPRETATION OF X-RAY

The lung findings suggest consolidation rather than fluid.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Dermatitis exfoliativa.
Uremia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Nephritis, probably due to arsenic.
Dermatitis exfoliativa.
Possibly terminal pneumonia.
Possibly acute or chronic endocarditis of the aortic valve.

ANATOMIC DIAGNOSIS

1. *Primary disease.*
   Interstitial nephritis.
2. *Secondary or terminal lesions.*
   Interstitial pancreatitis.
   Dermatitis exfoliativa.
   Infarcts of the spleen.
   Bronchopneumonia.
3. *Historical landmarks.*
   Chronic inflammation of the duct of Wirsung.

DR. MALLORY: This case was an even rarer type of renal lesion than the nephrosis which was seen recently at the Brigham Hospital. It was a generalized interstitial nephritis, a disease that unquestionably was very much commoner twenty years ago than it is now. The post-mortem records at the City Hospital show from 1900 to 1910 a number of cases every year of interstitial nephritis, almost invariably in cases

convalescing from scarlet fever. I believe I am correct in saying that in the last fifteen years there has not been a case at the City Hospital. I am sure that in ten years there have been no cases here. The condition occasionally does occur in cases in which scarlet fever cannot be proved. It is however rare, and I think that the suggestion that the original rash may have been scarlatinal is given extra strength at any rate by the character of the nephritis here, although we are not able to prove it.

The kidneys were very large, the pair weighing together 600 grams. The capsules stripped very readily, leaving a smooth, somewhat grayish-red surface with an appearance suggesting a diffuse infiltration, very much the type that is seen in a leukemic infiltration of the kidneys. Microscopic examination showed negative glomeruli, for the most part negative tubules, and an extremely diffuse infiltration of lymphocytes, plasma-cells and a few eosinophiles. Although the tubules did not show much it is not fair to say they were entirely negative. In some places there are leukocytes present in the lumina, and one also finds rare mitotic figures in the epithelial cells, signifying regeneration and presumably previous injury to the tubular cells. The exact mechanism of the production of an interstitial nephritis is still undecided. Some authorities claim it starts about the blood vessels, others that it represents a healing stage, perhaps of a tubular nephritis. Some of the findings here were suggestive of that point of view. I think we can definitely rule out a healing bichloride of mercury poisoning on account of the large amount of calcification that develops in such cases.

The heart was very small, weighing only 210 grams, the valves entirely negative.

There was a bronchopneumonia at the base of the lungs. The liver was large and showed a very marked degree of fatty infiltration rather similar to what is often seen in cases of nephrosis, though by no means characteristic of that condition.

There were two small infarcts in the spleen. The pancreas, surprisingly enough, showed also a very marked interstitial pancreatitis.

No further chemical examinations were made on the case, as I had been assured that arsenic and mercury had been ruled out.

Dr. Cabot: As you put all the facts together here, what do you think was the relation of this skin condition to the kidney condition?

Dr. Mallory: I think it was really very suggestive that she may have had a scarlet fever. I am unable to explain the exfoliative dermatitis. That is of course very suggestive of arsenic, but unquestionably can occur without it.

Dr. Cabot: This type of nephritis is not the type Dr. Councilman described twenty years ago as "acute interstitial nephritis"? That was in connection with diphtheria as well as scarlet, wasn't it?

Dr. Mallory: The majority of cases follow scarlet fever, though cases do occur in diphtheria, erysipelas or any acute disease such as measles in which septic, particularly streptococcic complications develop. The condition has not been reported following any nonbacterial toxemia to my knowledge.

Dr. Cabot: I still feel that the skin lesions here described are extremely unlike scarlet fever, though I have no proof that she did not have it.

A Student: How did they assure you that arsenic and mercury had been ruled out?

Dr. Mallory: The physicians felt that the examination of the urine was sufficient. We have since made an arsenic determination on the postmortem material and found it absolutely negative.

A Student: If she had taken a large dose, two weeks afterwards it would not be found in the urine.

Dr. Cabot: Were the adrenals negative?

Dr. Mallory: Yes, they were negative.

Dr. Cabot: Of course Dr. Mallory is on perfectly safe ground when he says people can have scarlet fever without a rash. That has been proved in experimental scarlet fever. Therefore the absence of rash is not against scarlet fever.

CASES 15032-3-4

THREE CASES ILLUSTRATING THE DIFFERENTIAL DIAGNOSIS BETWEEN ANGINA PECTORIS AND ABDOMINAL DISEASE, WITH THE CORRESPONDING TREATMENT

Medical Department

CASE 15032

A married male Jewish pressing machine operator of forty-four was referred to the Out-Patient Cardiac Clinic of the hospital for a constricting or clutching pain in the epigastrium radiating into both shoulders and into the right arm, brought on by walking after meals. It was especially noticed in cold weather. It was often accompanied by gas. The patient thought the pain was worse on deep inspiration, and it seemed to him to be worse when he was constipated. The pain itself was not severe but rather dull and aching in character. It never caused sweating and it never caused the patient to turn pale. It always came on with exertion and was relieved by rest. Operating his pressing machine did not bring it on. A small epigastric hernia had been found, and the question arose whether the symptoms were anginal in nature or whether they might be due to adherent omentum in the epigastric hernia.

The heart was negative on physical examination, the apex impulse and left border of dullness in the fifth left interspace being 7 centimeters from the midsternal line, inside the mid-

clavicular line. The left border of dullness in the third space was 4.5 centimeters. The sounds were of good quality. The rhythm was normal. The rate was 70. The blood pressure was 150/95. There was a small bulging in the epigastrium, apparently an epigastric hernia.

Fluoroscopic study at seven feet showed the measurements of the heart within normal limits. The electrocardiogram was normal. X-ray study of the gastro-intestinal tract was negative.

The patient was given nitroglycerin as a therapeutic test. He returned stating that he swallowed the nitroglycerin and experienced an uncomfortable headache but no relief from the pain. He was then given nitroglycerin grains 1/200, and told to dissolve it under the tongue when he had the pain. He returned to the Clinic after two weeks having tried the nitroglycerin in four or five times and having been relieved sufficiently so that he could continue walking, whereas previously he had been compelled to stop. He had only slight headache with this dosage. He was then given euphyllin grains iss three times a day for three weeks and had no definite attacks of angina pectoris while on the drug, though he complained of slight precordial soreness when he hurried. He then omitted euphyllin for a week and had three definite attacks of pain promptly relieved by rest. He again took euphyllin, but this time without the same relief. The attacks came on when walking to the car after breakfast. A light milk breakfast on the other hand afforded some relief.

CASE 15033

A native of Malta, single, aged forty, a cook by trade, was referred to the Out-Patient Department of the hospital complaining of pain under the lower sternum brought on by walking or going upstairs. Cold weather appeared to induce it. It was always under the lower sternum, never radiated into the shoulders or arms, and had no relation to meals. The family history was negative. There was gonorrhea in the past history, but lues was denied. He had for some time suffered from mild indigestion represented by a sensation of gas on the stomach.

Physical examination: The patient was of the nervous type. The lungs were clear. The heart was normal in size. There were no murmurs. The sounds were of good quality. Blood pressure was 130 systolic, 90 diastolic. X-ray of the chest was negative. X-ray study of the heart at seven feet was negative. Electrocardiogram showed normal rhythm, rate of 100, low T wave in the second lead. The blood Wassermann report was negative.

Bromides did not relieve his symptoms, but nitroglycerin gr. 1/100 under the tongue relieved the pain. He used four or five pills a day. A diagnosis of mild angina pectoris at an early age was made. While taking the nitroglycerin and limiting his exertion somewhat, he was also taking bismuth subnitrate gr. v t.i.d., which has been recommended as a vaso dilator. No definite effect from this drug could be noted. On limited exertion and the use of nitroglycerin as necessary for pain he seemed to be doing very well, the pain occurring much less frequently, when a more clear cut history of burning pain with sour eructations half an hour after meals was obtained. Gastro-intestinal X-rays at this time were negative. A five meal bland diet and tincture of belladonna drops 8 t.i.d. were prescribed. This régime relieved his gastric complaints and he was free from "anginal" attacks. Indeed, he felt so well that on his own initiative he tried running half a mile, and succeeded in doing so without causing an attack. His gastric distress was much improved. He now complained of a variety of new symptoms, including pain and paresthesias in his arms and occasional frequency of urination. More than ever he appeared to be a definitely neurotic person.

CASE 15034

A native mill worker aged twenty-seven, married, came to the Out-Patient Department complaining of a low substernal pain or pressure sensation brought on by excitement and exertion chiefly after meals and in cold weather, occasionally radiating down both arms. Pressure in the epigastrium elicited tenderness when he was having this pain. Attacks were relieved by rest within one minute.

The family history was carefully reviewed. There was no shock, cerebral hemorrhage or hypertension. The past history revealed rheumatic fever in childhood. As a child the patient had a weak stomach, characterized by an unpleasant sensation relieved by food. Ten or twelve years before coming to the hospital he had experienced a pain similar to though not so severe as the most recent one, coming on before meals and relieved by food.

Physical examination: The tonsils were large and cryptic. The gums showed pyorrhea. The lungs were normal. The heart was not enlarged. The apex impulse was active and heaving. There was a soft systolic murmur at the apex and a third sound. No diastolic murmur was present. The blood pressure was 140 systolic and 100 diastolic. The physical examination was otherwise negative except for early arcus senilis in both eyes. The fundi appeared normal.

A tentative diagnosis of angina pectoris on the basis of supposed early sclerotic changes in the coronaries was made. X-ray examination of the heart at seven feet was entirely negative. Electrocardiogram was negative aside from "rather low" T wave in all leads. Attacks of

pain were definitely relieved by nitroglycerin grains 1/200 under the tongue.

Discussion

BY ROBERT S. PALMER, M.D.

Case 15032

This case is interesting for three reasons; first, it represents the differential diagnosis between angina pectoris and abdominal disease recently emphasized again by Riesman[1] under the suggestive title "Myocardial Disease and Its Gastric Masquerades". The history as summarized here is much clearer than given at first by the patient, who complained chiefly of epigastric distress. The focus of attention on the abdomen was made even more reasonable by the coincidence of an epigastric hernia. However, the radiation of the pain, the relation to exertion after meals and the relief by rest and nitroglycerin taken together are diagnostic of angina pectoris. Second, as is so often the case in angina pectoris, here the heart on physical, X-ray and electrocardiographic examination is entirely negative. Third, this case demonstrates the difficulty in judging the value of drug therapy on the basis of symptoms alone. Euphyllin apparently gave marked relief followed by a return of symptoms when it was omitted. A second trial, however, only one week after omitting the drug failed to produce the same effect.

Case 15033

The differential diagnosis was between (a) a functional gastric condition in a very nervous patient, accompanied by spasm at the pylorus of the stomach, relieved by nitroglycerin, as pylorospasm is relieved by amyl nitrite, tincture of belladonna or any other other antispasmodic drug, and (b) true angina pectoris at a comparatively early age, the pain of which would likewise be relieved by nitroglycerin by means of its dilating action on the coronary arteries. It would be extremely unusual for a person once having developed angina pectoris to improve so far that he could run half a mile without bringing on an attack. That the pain was not true angina pectoris is further borne out by the relief which followed the use of a five meal bland diet and tincture of belladonna. It is very probable that the pain complained of by this patient came from pylorospasm induced chiefly by exercise after meals and by excitement. The radiation down both arms presumably represents an unusual rather widespread distribution of the afferent impulses. Thus we were at first misled by faith in the therapeutic test for relief of pain by nitroglycerin as diagnostic of angina pectoris.

Case 15034

Because of the age of this patient, because of the long history of indigestion and the relation of the present pain to meals, and finally because there appeared to be no adequate etiology for angina pectoris, gastro-intestinal X-rays were done and a constant deformity of the duodenal cap characteristic of duodenal ulcer was found. The patient was put on a five meal bland diet with tincture of belladonna drops 8 t.i.d. fifteen minutes before meals, and was so much relieved by this régime that a final diagnosis of duodenal ulcer with a very unusual reaction to this lesion was made.

SUMMARY

Case 15032 represents a true "gastric masquerade" of angina pectoris. The diagnosis of pylorospasm in Case 15033 is unsatisfactory, but is the most likely in view of the evidence. While the symptoms are characteristic and the relief by nitroglycerin typical of angina pectoris, the eventual relief by the five meal diet and tincture of belladonna, with improvement to the extent of running half a mile without an attack, are strongly against such a diagnosis. The type of individual and the course of his complaints favor the diagnosis of a functional gastric condition. Case 15034, in contrast to Case 15032, clearly represents the apparent cardiac symptoms which may be produced by a duodenal ulcer. Again, the symptoms and the relief by nitroglycerin are characteristic of angina pectoris. The fact that angina is very rare at twenty-seven years of age and the fact that when it does occur it is almost always associated with rheumatic aortic regurgitation[2] led to the search for some other cause of the symptoms. A duodenal ulcer was found, and the symptoms were relieved by suitable ulcer régime.

It is clearly demonstrated from these cases that too much trust may not be put in the therapeutic test with nitroglycerin in the diagnosis of angina pectoris. Like amyl nitrite, nitroglycerin is an effective antispasmodic and will relieve pylorospasm and with it the pain of peptic ulcer. Thus angina pectoris not only appears in the guise of abdominal disease, but on occasion the symptoms of abdominal disease strongly suggest angina pectoris.

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Diagnoses

Case 15032

Angina pectoris.
Epigastric hernia.

Case 15033

Pylorospasm.
Psychoneurosis.

Case 15034

Duodenal ulcer.

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THE STUDY AND CARE OF CANCER PATIENTS IN MASSACHUSETTS

IN this issue may be found a series of articles dealing with the cancer problem and the educational features of the campaign sponsored by the Massachusetts Department of Public Health.

History records very few if any movements designed to meet the needs of sufferers afflicted with one particular disease comparable with the rapid and intensive development of the campaign in Massachusetts, inaugurated by the legislature and carried on by the Department of Public Health.

Doctors, Social Agencies and the laity generally responded to the appeals and throughout the State, clinics are in operation and are providing diagnostic service for all who will apply.

A large hospital has been equipped at Pondville and is acting as one of the central rallying points for conference, as well as for the care of patients.

We are privileged to publish the papers read at two recent meetings at Pondville and urge our subscribers to study with care the material which covers the important features incident to dealing with the problems of cancer.

Public interest and participation in the activities of public health administration under expert leadership have demonstrated remarkable benefits to the people in several fields of preventive and therapeutic medicine, as for example, has been the case with tuberculosis, diphtheria and most of the communicable diseases.

The same spirit of co-öperation is needed in the contest with cancer, which now ranks second as a cause of death. The public has been taken into the confidence of the profession. It is now the duty of physicians to keep abreast of the times in all efforts to educate the people.

Careful perusal of these addresses will tend to fix in the minds of doctors the facts relating to the responsibilities now before us and ought to stimulate action in educating those who come under their care.

THE INJECTION TREATMENT OF VARICOSE VEINS

THE injection treatment of varicose veins has now reached the point where the safety of the method may be said to have been demonstrated. Its contraindications, and the precautions necessary to avoid the complications which may accompany the method, have been well established. While there is as yet no unanimity of opinion as to a choice of solutions for injection, it has been established that there are a number of solutions which may be injected into the veins with safety.

The difficulties of the surgical removal of varicose veins are only too well appreciated by any surgeon with experience. The necessity for long incisions, tedious dissections, the difficulty of removing all the involved veins, and the discomfiture of finding that even after painstaking operations varicosed veins still remained are some of the drawbacks to this procedure, which is disliked by most surgeons.

The fact that the injection treatment of veins can be carried out without interfering with the patient's work or activity, the fact that areas of varicosities can be cared for gradually, a few areas at a time and as they appear, offers to the numerous sufferers from this distressing condition a real boon.

The technical difficulties of the method are few, but the possibilities of distressing and discomfiting complications real. Since it is to be hoped that the employment of the method will become widespread, it is likewise to be hoped that those who intend employing the method will thoroughly familiarize themselves with the technical features and contraindications.

THE DECISION IN THE ALLEN CASE

UNDER correspondence on page 153 of this issue a letter by Samuel B. Horovitz gives the final decision in an important case.

This finding by the Court of last resort is disappointing in that a member of a hospital

staff is not permitted to charge for services for an injured employee.

The question comes to mind whether charges of an amount above its regular hospital prices for the purpose of paying a doctor on the staff will be allowed. The decision does not seem to cover that question and it may be that the Industrial Accident Board and the Courts may hold that the hospital charge as now allowed will be all that will be recognized under the law.

If so some further effort to clear the situation may be in order.

Since there is a common and growing custom of permitting members of a hospital staff to charge for the care of private patients, physicians may, it seems to us, properly charge for services for injured workmen insured under the present laws pertaining to accident insurance, even though the patient has not selected his personal physician.

If the profession and hospitals are agreed on this matter an effort should be made to secure payment to doctors for services in these cases.

We fail to see why competent physicians should be obliged to give professional service to any one who is not in the class of those who are entitled to charity.

The present laws relating to accident insurance are the result of efforts to deal justly with all concerned and we may confidently expect that the Industrial Accident Board will not obstruct efforts to have the laws changed in order to provide payment for reasonable charges by physicians. It will of course become necessary to show that the charge of staff doctors is reasonable.

The insurance companies and perhaps the employers may not look favorably on any added costs to them, but we can see no reason for objection by the Board or the Courts. Both now act in conformity with the interpretation of existing laws. These laws have been amended from time to time. Further changes may be in order.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

DALAND, ERNEST M. A.B., M.D. Harvard, 1918. F.A.C.S. Chief of Visiting Staff, Pondville Hospital. Surgeon, C. P. Huntington Hospital. Surgeon to Out Patients, Massachusetts General Hospital. His subject is: "The Work at the Pondville Hospital." Page 105. Address: 483 Beacon St., Boston.

JACKSON, HENRY, JR. A.B., M.D. Harvard, 1919. Assistant Visiting Physician, Boston City Hospital. Associate Physician, Collis P. Huntington Memorial Hospital. Assistant, Thorndike Memorial Laboratory. Chief Visiting Physician, Pondville Hospital at Norfolk. Faculty Instructor in Medicine, Harvard Medical School. His subject is: "Certain Clinical Aspects of the Malignant Lymphomas." Page 108. Address: Chestnut Hill, Massachusetts.

GERBER, ISAAC. A.B., M.D. Harvard, 1910. Visiting Radiologist, Pondville Hospital at Norfolk. Consulting Roentgenologist to Rhode Island Hospital, Providence City Hospital, Providence Lying-In Hospital, etc. His subject is: "The Use of Radium in the Treatment of Cancer." Page 109. Address: 201 Waterman Street, Providence, R. I.

TAYLOR, GRANTLEY W. A.B., M.D. Harvard, 1922. Assistant in Surgery, Massachusetts General Hospital, Harvard Medical School, Collis P. Huntington Memorial Hospital. Assistant Visiting Surgeon, Pondville Hospital. His subject is: "The Use of Electrosurgery in the Treatment of Cancer." Page 110. Address: 264 Beacon Street, Boston.

MEIGS, JOE V. A.B., M.D. Harvard, 1919. F.A.C.S. Surgeon to Out-Patient Department, Massachusetts General Hospital, Palmer Memorial Hospital. Assistant Surgeon to Out-Patient Department, Huntington Memorial Hospital. Surgeon, Pondville Hospital at Norfolk and Vincent Memorial Hospital. His subject is: "Cancer of the Female Genitalia." Page 111. Address: 264 Beacon Street, Boston.

WARREN, SHIELDS. A.B., M.D. Harvard, 1923. Pathologist, New England Deaconess Association Hospitals, Huntington Memorial Hospital. Director, State Diagnosis Service. Instructor in Pathology, Harvard Medical School. His subject is: "Biopsies and Frozen Sections." Page 112. Address: 195 Pilgrim Road, Boston.

CABOT, RICHARD C. A.B., M.D. Harvard, 1892. Professor of Clinical Medicine and Social Ethics, Harvard University. His subject is: "Cancer As A Responsibility of Every Citizen." Page 113. Address: 101 Brattle Street, Cambridge, Massachusetts.

BIGELOW, GEORGE H. A.B., M.D. Harvard, 1916. Doctor of Public Health, 1921. Commissioner of Public Health of Massachusetts. His subject is: "The Enlarging Cancer Program." Page 116. Address: Room 546, State House, Boston.

KELSO, ROBERT W. A.B., LL.B. Executive Secretary, Boston Council of Social Agencies. Chairman, Educational Committee of the State Cancer Program. His subject is: "Cancer Education in Massachusetts." Page 116. Address: 43 Tremont Street, Boston.

LAWRENCE, WILLIAM. A.B., B.D., LL.D., D.D. Dean Episcopal Theological School, Cambridge. Bishop of Massachusetts, 1893-1926. His subject is: "Social Infection and the Com-

munity." Page 119. Address: 122 Commonwealth Avenue, Boston.

CATTELL, R. B. A.B., M.D. Harvard, 1925. Assistant in Surgery, Lahey Clinic. His subject is: "The Injection Treatment of Varicose Veins." Page 123. Address: 605 Commonwealth Avenue, Boston.

BURNETT, JOSEPH H. A.B., M.D. Harvard, 1919. Junior Visiting Surgeon, Boston City Hospital. Assistant in Surgery, Boston University Medical School. His subject is: "Fractures of the Carpal Scaphoid." Page 126. Address: 520 Commonwealth Avenue, Boston.

PALMER, ROBERT S. M.D. Harvard, 1925, and SPRAGUE, HOWARD B. A.B., M.D. Harvard, 1922, continue their presentation of "A Cardiovascular Review." (See Page 71, issue of January 10). Additional information regarding the authors appears on page 94, issue of January 10.

MISCELLANY

CERTAIN DECISIONS BY THE MASSACHUSETTS BOARD OF REGISTRATION IN MEDICINE

At a meeting of this Board January 3, 1929 the registration of Dr. Christian A. Nelson of Cambridge was restored to take effect January 26, 1929. His right to practice was revoked January 26, 1928.

The registration of Dr. Robert Sullivan was suspended for one month. He was charged with withholding funds from a patient.

The registration of Dr. Amedee P. Lamoureaux of Chicopee was revoked. The charge was based on sworn affidavits alleging attempts to practice some form of sexual perversion.

Other cases were not concluded and will be considered later.

A DOCTOR WANTED IN MILTON MILLS, N. H.

The JOURNAL has received a letter stating that there is an opening in Milton Mills, N. H., It is stated that a lucrative practice can be secured in that place. Frank F. Spencer will furnish more detailed information.

A ONE THOUSAND DOLLAR PRIZE

For his work in an investigation of the ductless glands and particularly in his isolation of pituitary hormones Dr. Oliver Kamm, director of chemical research of Parke, Davis & Company, manufacturing chemists, has been awarded the $1000 prize by the American Association for the Advancement of Science for the "most noteworthy contribution to science presented at the annual meeting."

Some 2000 scientists delivered addresses at this meeting, which was held in New York. The award was announced on January 2 by Dr. Henry Fairfield Osborn, president of the Association.

The isolation of two hormones from the posterior lobe of the pituitary gland, as revealed by Dr. Kamm, is held by chemical scientists to be equal in importance to the isolation of insulin and the discovery of adrenalin.

Dr. Kamm isolated the alpha and beta hormones of the posterior pituitary after twelve years' work in the Research Laboratories. This, incidentally, is the first time that anyone has demonstrated that one gland might contain more than one hormone.

The alpha hormone is the so-called oxytocic principle. The beta hormone is the blood-pressure-raising principle. Dr. Kamm also showed definitely that the beta hormone has the power of controlling the excessive output of water. His paper before the American Association for the Advancement of Science showed that it has been a mistake to refer to the so-called "renal activity" of pituitary extracts.

The beta hormone does not act upon the kidneys, but controls the utilization of water by the individual tissues of the body.

The usefulness of this beta hormone is now under investigation in diseases characterized by excessive loss of water, such as diabetes insipidus, burns, cholera, other infectious diseases, and surgical shock.

Dr. Kamm points out in his prize-winning paper that much depends upon the ability of the body tissues to retain and utilize water. He said:

"The dangerous symptoms following surgical anesthesia are due mainly to the dehydration of tissues, and the use of beta hormone prevents such desiccation.

"Following extensive body burns, it has been thought that death results from the absorption of toxins. According to the newer view, however, it may be the result of the desiccation of the body tissues. In such cases, if this were proved true, the use of a drug like the beta hormone might possibly save life by favoring the retention of water in the tissues. It is conceivable that something quite startling might flow from this idea in cases of serious burns.

"Water-intoxication, with its alarming symptoms leading even to unconsciousness, is very rare. The other extreme, that of water-poverty, is rather more common, and is characterized by extreme thirst and excessive elimination of water. This condition, known clinically as diabetes insipidus, is relieved at least temporarily by pituitary extract, and it has just been found that the beta hormone possesses this remarkable action.

"Although other factors are also involved, it appears that proper hydration is needed for the growth of tissues. In this respect, few of us are absolutely normal. We find that some individuals are extremely sensitive to the action of the beta hormone—they are the 'physiological wets'; while others readily return to normal after administration of the hormone—they are the 'physiological drys.'

"It has just been observed that the fleshy type of individual is almost invariably of the wet type, whereas the slender, scrawny person is usually a dry. The suggestion is therefore made that we have here possibly one of the important explanations as to why the former is fleshy and why the latter fails to gain weight readily in spite of an excessive intake of food and water. It is apparent that the portly person who is desirous of reducing must cut down on his liquid intake, as well as on his intake of solid food. As for the scrawny person, gland therapy may possibly be indicated, but here the work still is in the investigative stage and conclusions cannot be drawn.

"Only a very few grams of highly purified alpha

and beta hormones are as yet available. Commercially they are known as pitocin and pitressin, respectively. Although the Research Laboratories use the methods of micro-analysis, a single laboratory experiment requires the pituitary glands of 50,000 cattle."

In prefacing his address, Dr. Kamm told the American Association for the Advancement of Science that:

"Man is on the threshold of a great chemical era. As the number of products derived directly from nature is decreasing, the field of synthetic possibilities is continually increasing, and as a result the possibility of producing new or related drugs will continually increase."

TWO TRUSTS MERGE

The Rockefeller Foundation organized in 1913 and the Laura Spelman Rockefeller Memorial founded in 1918 have been consolidated with the combined resources amounting to $223,000,000.

Until the annual meeting in May the Board of Directors and Trustees consists of the following named persons:

James R. Angell, Trevor Arnett, John W. Davis, David L. Edsall, Simon Flexner, Raymond P. Fosdick, Jerome D. Greene, Ernest M. Hopkins, Charles P. Howland, Vernon Kellogg, John D. Rockefeller, Jr., Julius Rosenwald, Anson Phelps Stokes, Frederick Strauss, Augustus Trowbridge, George E. Vincent, George H. Whipple, William Allen White, Ray Lyman Wilbur, Arthur Woods and Owen D. Young.

The Rockefeller Foundation announced creation of a new corporation, the Spelman fund of New York, to carry on the work done by the Laura Spelman Rockefeller Memorial in the advancement and diffusion of knowledge concerning child life, the improvement of inter-racial relations and co-öperation with public agencies.

THE BEGINNINGS OF INOCULATION

A series of articles on the Beginnings of Inoculation by Dr. Stephen Blodgett of Boston is being published in *Our Boston*.

METRAZOL

Change in Name

In a recent issue of the *Journal A. M. A.* the Council on Pharmacy and Chemistry announced the acceptance of Metrazol for N. N. R. This product, originally introduced as Cardiazol, is now marketed in the U. S. A. under the trade name Metrazol—a name derived from the chemical composition of the product—pentamethylentetrazol.

Metrazol is a synthetic organic compound, entirely new in the field of medicine. A white crystalline substance, soluble in water, no incompatibles, very stable.

HOW TO CHOOSE YOUR DOCTOR

The Metropolitan Life Insurance Company has distributed a leaflet setting forth information for the laity to the employment of doctors. This ought to be read especially by those who are not under the care of well-qualified physicians.

THE REVOCATION OF THE LICENSES OF CERTAIN DOCTORS IN CONNECTICUT

The United States Supreme Court has refused to hear an appeal from the Connecticut Supreme Court of Errors thus upholding the decision of the Superior Court which sustained the action of the State Department of Health in revoking the licenses of eleven eclectic practitioners. This closes a contest begun in 1924.

There are still cases pending in which the Department of Health has been engaged in correcting irregularities in licenses in that State.

CO-ORDINATION OF RESEARCH

The age of individualism has passed, although here and there remnants of the old system survive. The American genius for organization, however, has left but few of them undisturbed. No longer does the poor inventor starve unappreciated in a garret and conduct his experiments with inadequate equipment. Today he works in a great laboratory, with every facility available, encouraged and supported by the corporation which plans to utilize his discoveries. No longer does the laborer toil hopelessly long hours under bad conditions for a wage insufficient to keep his family from want. Today he bargains collectively, and prospers beyond the largest dreams of his predecessors. No longer does the small manufacturer turn out a limited quantity of wares which differ from all those made by others in the same line. Today, the small businesses are gathered into large corporations, their products are standardized, the cost of production is halved, and the market doubled. The college consists no longer of Mark Hopkins at one end of a log and a student at the other; but in the immense university, thousands of students learn facts and methods in keeping with the newer knowledge of the universe and the magnitude of the civilization of which they are a part. Even medical research is no longer isolated. Men of wealth have dedicated their riches to the public from whom it came by establishing great foundations for the sole purpose of improving the health of the world. Research, thus, has not escaped the passion for organization which characterizes the present age; and this is well. Discoveries in the field of health have largely passed beyond the obvious stage, and study of the obscure, the intangible, requires concentration from which the individual worker is precluded by the necessity of self-support; it requires equipment which the individual is seldom able to accumulate; it requires co-öperation which the individual can secure only too infrequently. Health research, as industrial research, must yield to the exigencies of the situation and accept organization if it is to produce results which justify it.

This tendency toward co-ördination of the immense amount of research now being conducted throughout the world is evident in the expressions of health workers frequently appearing in the press, both lay and professional. Some one has recently commented on the thousands of experiments conducted without fruition. The experimenters need a guiding hand to eliminate the useless research, and save time spent for productive study. It is obvious, also, that thousands of isolated experiments have failed to bear fruit because the seed fell on stony ground; that is, because the findings did not reach the attention of those who were able to appreciate their value. A

central correlating agency is imperative if the results obtained are to be commensurate with the effort expended.

This much appears to be conceded quite generally. The point that is not yet satisfactorily worked out is the proper co-ördinating agency. There would appear to be several possibilities.

The first and most obvious would be the designation of such an agency by the national Government. There is now a bill before Congress to establish a National Institute of Health, using as a nucleus the Hygienic Laboratory already in existence. This Institute would be under the control of the Surgeon General of the United States Public Health Service, and its purpose would be pure scientific research relating to the cause and prevention of diseases. The bill has been approved by the Senate Committee on Commerce. According to the report of this committee, "the plan of the institute is to make of it a great co-öperative scientific organization in which leading experts in every branch of science will be brought together and given opportunity to work in unison for the purpose of discovering all the natural laws governing human life, and especially to learn those variations of such laws which are detrimental to human health." It is difficult to overestimate the importance of this bill, and if such an institute is established, it might prove to be the best agency for correlating the research in health done throughout America.

For best results, however, it would not be sufficient to organize only a national institute of health. Every state should, then, have a state institution of the same type for the express purpose of co-öperating with the national unit. Bureaus of research might be organized within the already-established departments of health.

The duties of the county health officer, now so ardently urged as a means of bringing together all the health activities within his district, could be increased to add this function; or it might be assigned to the largest hospital in a given territory. The service of the local health institute necessarily would consist largely in collecting and reporting the individual research and clinical experience of the practicing physicians and the hospitals within its scope. Nevertheless, this service must not be underestimated. Large amounts of important data could be collected by such agencies, and when brought together, classified, and analyzed by the central correlating officers, would provide information not available from any other source. This would give an impetus to individual research which it now lacks.

The second possibility would be the utilization of the organizations established by the large health foundations to correlate the activities of research workers throughout the country. This would necessitate, however, the building up of local co-öperating agencies, and would mean the development of an entirely new system of national scope. Since such national organizations are already in existence, it would seem best that the foundations limit their activities to those already undertaken. It is doubtful, also, whether it would be advisable for the correlating agency itself to do research work. It would perhaps be most successful by confining itself strictly to the work of organization, direction, correlation, interpretation, and dissemination.

A third possibility would be a new organization, with county and state branches converging into a national headquarters. Something of the kind has recently been started in the cancer work by the appointment of a National Cancer Committee with members in all parts of the country, with the co-öperation of Drs. Charles H. Mayo and H. N. Bundesen, and others prominent in the profession. This method would be open to the same criticism as the utilization of the health foundations—only more so—that it would necessitate establishing another complete organization.

There is one far-reaching national organization, already thoroughly established, and made up of those who are most interested in the problem of health—the county, state, and national medical associations. There is no class of citizens so vitally concerned in research into the normal and abnormal functioning of the human body as physicians. Many of the research workers are members of this organization. Most of the research is reported in the magazines published exclusively for physicians. The medical organizations have well-developed contacts with hospitals, research laboratories, the health foundations, public-health associations, and governmental agencies, as well as individual practitioners. There is no organization with potential resources quite so comprehensive as those enjoyed by the system of medical societies which forms a network covering the entire United States and its possessions. Furthermore, there is no organization with better facilities for international exchanges. Channels for this fellowship are already in existence, and need only use to develop their function to the fullest.

The medical organizations of the country owe it to themselves and to their clients to establish a protectorate in health research. Co-öperation with governmental agencies, foundations, and lay organizations is not only desirable but imperative; but the initiative should arise from the medical societies. Theirs is the responsibility and theirs is the privilege. This does not mean that the medical societies must necessarily finance a large program of research work. If the machinery were provided, the financial support would be forthcoming from the many individuals interested in this type of work.

The responsibility is great and the opportunity knocks. Let the county, state, and national medical societies answer the call.—Editorial from the *Pennsylvania Medical Journal*, January, 1929.

CORRESPONDENCE

COMMENT ON EDITORIAL CONCERNING MALPRACTICE SUITS

January 12, 1929.

Editor, NEW ENGLAND JOURNAL OF MEDICINE,
Boston, Mass.

Sir:

I have read with great interest the editorial on malpractice suits which appeared in the JOURNAL of January 10, and it does seem reasonable that the medical profession should make an effort to acquaint itself with the facts, even if it should later decide that no action is appropriate.

I would like to discuss briefly one question raised in the editorial, namely: "Are the insurance companies stimulating suits to get physicians to take out more insurance with them?"

I am not in a position to go into this matter fully,

but there is available some information which indicates that insurance companies are not eager to sell liability insurance to physicians in Massachusetts at present rates and under present circumstances.

In 1908 there were about twenty companies writing physicians liability insurance in Massachusetts at $10.00 for a $2500—$5000 policy. Later the figure was raised to $15.00 for the $5000—$10,000 policy. In 1921, there were only about seven companies selling physicians liability insurance in Massachusetts and the rate was increased from $15.00 to $45.00. Even with increase in rate the loss was heavy and in 1923, at least three more of the larger companies withdrew from Massachusetts.

In 1921 one of the companies had been willing to sell liability insurance to members of the Massachusetts Medical Society at $21.00 for a $5000 policy, reducing its rate for this group of presumably preferred risks from $45.00. Two years later this company increased its policy to $10,000 without increasing the rate except for x-ray, which was $75.00.

In 1927, this same company rearranged its rates in accordance with the hazard as indicated by experience, premiums then ranging from $20.00 to $75.00 for $10,000 insurance.

I understand that at the present time, most companies are not willing to insure physicians in Massachusetts; one company is soliciting no new business and is not even urging old policy holders to renew; another company that is doing a considerable amount of business, is of the opinion that an upward readjustment of rates on account of the rapidly increasing risk, as shown by experience, will be necessary unless something is done to check the number of claims. In this part of the state we hear of only two companies that are willing to write Physicians' Liability Insurance.

I am informed that some of the companies that were active in Massachusetts but have withdrawn, are still active in other states, with but moderate increase in rates over those of twenty years ago.

The situation is that many of the Liability Insurance Companies have already withdrawn from Massachusetts, and it seems not unlikely that liability insurance with adequate protection for physicians in this Commonwealth, at a cost that physicians will pay, will disappear in a few years unless something is done to check the number of claims. It is extremely improbable that the companies are themselves pursuing a policy that will put them out of business in Massachusetts.

It may be that physicians, insurance companies, lawyers, courts, and the general public are, each in part, to blame for the present situation. But the primary claim is that the physician is at fault, and the housecleaning, if any is necessary, should begin with the medical profession. If we can say that we have done our part in the housecleaning, we can appeal to the legal profession with much greater force.

Sincerely,

STEPHEN RUSHMORE.

THE DECISION OF THE SUPREME JUDICIAL COURT OF MASSACHUSETTS IN THE ALLEN CASE

NEW ENGLAND JOURNAL OF MEDICINE,

Dear Editor:

The Supreme Judicial Court has just handed down a decision in the Allen Case and I am enclosing a copy of it as it undoubtedly will be of interest to thousands of staff doctors in this Commonwealth.

The decision in effect declares that the payment to the hospital of the rate of $21 a week (recently increased to $22 and $23 per week) in effect pays not only the hospital but the doctors and nurses and medicine and all expenses connected not only with board and room but also with operations, performed upon the employee. In other words, the $21 a week paid to a public hospital represents every service performed by the hospital in supplying both the bed and board and doctor and nurses, and that the doctor has no right to make a separate charge. The Supreme Court cites no previous case to support its decision and evidently went the full length to support the stand taken by the Industrial Accident Board for many years.

It is of interest to note that the decision was written by Justice Carroll, who formerly was a member of the Industrial Accident Board. But it is also interesting to note that the Supreme Court, in effect, stands behind the public hospitals in their right to make a charge and puts no limitation on the charge to be paid to the hospital. It simply asserts that the hospital, having accepted the $63 for the three weeks in full payment, the hospital bill included all the services it offered in the form of staff doctors, and nurses.

And on the question of a staff doctor performing an operation in an emergency, the court says that unless the bill of the staff doctor for services rendered is approved by the Board, the same will not be allowed. In my opinion, this permits the Board in future cases to approve the bill of a staff doctor who renders meritorious services in any particular case, and thus allows the staff doctor to be paid in a case of real emergency.

It seems to me as a matter of common justice that a hospital has a right to charge more per week in a case where special services are rendered such as an operation, special care and special medicines, than in the ordinary case where the patient is simply convalescing for a week or more. In other words, the rate ought to be higher where special services are performed than where the patient simply gets routine treatment in the ordinary course.

In the Allen Case, for example, where the staff doctor performed an operation, amputating fingers, followed by special aftercare, it would seem that for the first week a charge in excess of $21 might be made by the hospital and would be highly justifiable; and I believe, if the matter were brought to the Board's attention by the joint action of the heads of the hospitals, the Board might consider this aspect and allow an increased amount where time and special care are given.

Otherwise insurance companies who would have to pay their own doctors for operations and their own hospitals for special care will continue to throw these cases into a public hospital, knowing that they will get the entire care for $21 a week without paying the staff doctor and without paying the nurses.

I fear, as a result of the Supreme Court's decision in the Allen Case, that the insurance companies will encourage their assureds, the employers, in allowing these cases to go to public hospitals at $21 a week rather than to their own hospitals or private hospitals at rates in excess of $30 a week in addition to extra charges made for the services of physicians and private nurses.

At the present time, as I understand the situation, the hospitals are receiving $23 per week when in fact they are each spending over $35 weekly and deducting the deficiency from their own funds. In other words, the public is paying the deficiency which ought ordinarily be borne by the insurance companies. And if the insurance companies take advantage of the decision in the Allen Case to "dump" more and more cases into public hospitals, the public will be bearing the burden which I believe the Legislature intended to take from the public when it put the Workmen's Compensation Act into effect on July 1, 1912.

I would therefore suggest that the heads of the various public hospitals in this Commonwealth take some action jointly with the members of the Board in order that a just result may be reached.

Very truly yours,

SAMUEL B. HOROVITZ.

JAMES ALLEN CASE

Carroll, J.

In this proceeding under the workmen's compensation statute, Dr. Spellman, a member of the staff of the hospital to which the employee was taken following his injury, seeks to recover compensation for his services as a physician in the treatment of the employee at the hospital. The employee was paid the compensation due him under the statute and the insurer paid the hospital bill amounting to $63.

The Industrial Accident Board found that the injured employee consulted a doctor who bandaged his hand; that he then went to St. Elizabeth's Hospital where a nurse asked him if he had a doctor and he said he knew no doctor at the hospital; that the nurse "suggested the name of Dr. Spellman and he said that Dr. Spellman would be all right". The board further found that the employee did not choose a physician as the statute contemplated, that the insurer fulfilled the obligation placed upon it by the statute and furnished adequate and reasonable hospital services to the employee, and denied the claim of the physician for service in the care of the employee. In the Superior Court a decree was entered for Dr. Spellman in the sum of $45. The insurer appealed.

G. L. c.52 s.30, so far as material, provided that during the first two weeks after the injury the insurer is to furnish adequate and reasonable medical and hospital services; that the employee may select his own physician or in case of an emergency a physician other than the one provided may be called to treat the patient at the expense of the insurer, subject to the approval of the department. As we construe the findings of the board, the insurer compiled with the statute and did all that was required of it—it furnished the employee with adequate and reasonable medical and hospital services. Physicians as well as nurses are generally expected to be in attendance at a public hospital. A patient who has been taken to such an institution, if he has no physician of his own to treat him, naturally expects that he will receive treatment from someone on the staff.

When an injured employee under the compensation act goes to such a hospital and does not select a physician, the payment to the hospital of its charges includes the expenses of nurses and physicians, and the insurer is not required to pay the physician who is a member of the staff for such services.

The board found as a fact that the employee did not choose a physician. The finding was warranted. The employee was at the hospital for treatment. His response to the nurse's suggestion concerning Dr. Spellman was not a selection of a physician under the statute. The employee was willing to accept such facilities as were offered, including nurses and physicians; he accepted the suggestion of the nurse, but he did not make such a selection as the statute contemplates when a patient selects a physician other than the one provided by the insurer.

There was no emergency which entitled the doctor to compensation under the statute. In case of an emergency a doctor called to treat a patient may recover compensation, but this is subject to the approval of the department and in the case at bar there was no such approval.

Decree reversed.

Decree to be entered for insurer.

RECENT DEATHS

BIRMINGHAM—DR. ROBERT MICHAEL BIRMINGHAM, a Fellow of the Massachusetts Medical Society, died of pneumonia, following a posterior gastroenterostomy for ulcer of the stomach, at his home in Lawrence, November 27, 1928, at the age of 70. The son of Michael and Eliza Barry Birmingham, he was born in Ware, Massachusetts, January 28, 1858. His education was received at Atkinson (N. H.) Academy and at Dartmouth Medical School, where he received an M.D. in 1884. He settled in Lawrence that year and in 1885 joined the state Medical Society, in which he had served as a censor in the Essex North District. Dr. Birmingham was a Fellow of the American Medical Association. He is survived by his widow, who was Theresa McCabe, of Lawrence.

SHATTUCK—The JOURNAL chronicles with extreme regret the passing of DR. FREDERICK CHEEVER SHATTUCK, who died at his home in Brookline of sepsis following tonsillitis, January 11, 1929, at the age of 81. He had been Jackson Professor of Clinical Medicine at Harvard, Visiting Physician at the Massachusetts General Hospital, a promoter both by example and financially of all that was best in the medical profession during his lifetime, especially was he a supporter of this medical journal through a long series of years when it most needed assistance. He was the outstanding medical man of his time in this part of the country and will be sorely missed.

SHAY—DR. THOMAS MAGUIRE SHAY, a Fellow of the Massachusetts Medical Society, died at his home in Roxbury of pneumonia, January 11, 1929, after a week's illness. A native of Roxbury, where he was born 67 years ago, he was graduated from Boston College in the class of 1883 and from Harvard Medical School in 1889. He pursued his medical studies at the Rotunda Hospital, Dublin, Ireland, and in London, England, settling in general practice in Roxbury, where he had practiced since. He is survived by his widow, Mrs. Nora Shay.

SARTWELL—DR. RANSOM HARVEY SARTWELL, Superintendent of the Rhode Island State Hospital for Mental Diseases, at Howard, R. I., was shot to death

on January 11, 1929, through a window of his home near the hospital as he sat in a chair at 10.30 p. m. by a shotgun supposedly in the hands of a former inmate of the hospital who had been heard to utter threats.

Dr. Sartwell was born in New York 41 years ago, a graduate of the University of Vermont College of Medicine in 1911. From 1915 to 1917 Dr. Sartwell was an interne at the Rhode Island State Hospital and from 1917 to 1918, director of the state penal institution at Howard. Then he was on the staff of the Foxborough, Massachusetts, State Hospital and in 1923 assistant superintendent of the Worcester State Hospital. The next year he moved to the Rhode Island Infirmary at Cranston and in 1927 assumed the superintendency of the State Hospital. Dr. Sartwell was a member of the American Psychiatric Association, the New England Society of Psychiatry, the American Medical Association and the Massachusetts Medical Society. He is survived by his wife, who was a witness of the terrible tragedy.

OBITUARY

ANNA CAROLINE MAXWELL

Anna Caroline Maxwell, after an illness of several months, died at the Medical Centre Hospital on January 2 at the age of seventy-seven. She was buried in the Arlington National Cemetery on the following Sunday.

Born at about the time when Florence Nightingale was undertaking her life work in nursing which Strachey says was then considered "a peculiarly disreputable occupation", Miss Maxwell lived to see nursing recognized as a noble profession and to have her name perpetuated in Anna C. Maxwell Hall in the building in which she died.

Boston is particularly interested in her life because it was at the Boston City Hospital that this daughter of a Scotch minister received her first training, and in 1880 was made the Superintendent of Nurses. The next year she was appointed to the same position at the Massachusetts General Hospital. In 1889 she was called to New York, first to St. Luke's Hospital and then to establish the Training School at the Presbyterian Hospital.

During the war with Spain Miss Maxwell and a corps of assistants invaded Camp Thomas, Georgia, to help in the care of victims of typhoid fever which disgraced our army at that time. Her achievements there are summarized in two sentences in a letter from Colonel Hoff. "When you came we did not know what to do with you. Now we do not know what we would have done without you".

Miss Maxwell retired at the age of seventy. Regulations as to age prevented her entering active service overseas during the World War but they did not prevent her from doing even more important work in organizations in this country nor prevent her from trips of inspection in France.

The care of the individual patient was always her chief concern in organizing the training schools in which she was a guiding spirit. It is eminently fitting that the Dean of American Nurses, often spoken of as "the American Florence Nightingale" should rest in Arlington. May the ideals for which she worked be upheld.

NOTICES

CORRECTION

The name H. Bernard Goldberg which appeared in the list of book reviewers in the JOURNAL index to Vol. 199 should have been Bernard I. Goldberg.

ROXBURY HOSPITAL

The Roxbury Hospital has been given a sum of money with which fifty milligrams of radium has been purchased and the hospital is now equipped for radium therapy. The hospital maintains an outpatient department including all branches of medicine and surgery and will be pleased to take care of any cases referred to it by the medical profession.

M. BENNETT, M.D.,
Secretary of the staff.

THE HOUSEHOLD NURSING ASSOCIATION INCORPORATED AND TRAINING SCHOOL FOR ATTENDANT NURSES

AN ANNOUNCEMENT

The 73rd class of Attendant Nurses will open at the Household Nursing Association, 222 Newbury Street, Boston, on Tuesday, January 22nd.

This one year course, which has done much to solve the problem of caring for invalids in the home, is open to women from 19 to 45 years of age. The attendant nurses trained by this Association are not intended to give nursing care during serious illness. Their services are valuable during convalescence, in chronic cases, and for the difficult weeks which follow a mother's return from the hospital and also for the care of well children or old people when circumstances make this necessary.

Miss Katherine Shepard, R.N., Superintendent of the Household Nursing Association, reports that there are still a few vacancies in the January class. The limit is 25 and all new applications must be sent in immediately. The training includes classes at the school, 222 Newbury Street, directed by trained dietitians and registered nurses, and practical instruction in the wards of a hospital. The course is especially adapted to women who are unable to meet the requirements of a training school for nurses.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Dietitian, $1,800 to $2,100 a year.

Applications for the above-named position must be on file with the Civil Service Commission at Washington, D. C., not later than July 1.

The examination is to fill vacancies in hospitals of the Veterans' Bureau and the Public Health Service throughout the United States.

Physiotherapy Aide, $1,800 to $2,100 a Year

Applications for the above-named position must be

on file with the Civil Service Commission, Washington, D. C., not later than February 5.

The examination is to fill vacancies in hospitals of the Veterans' Bureau and the Public Health Service throughout the country.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

UNITED STATES PUBLIC HEALTH SERVICE

CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE IN NEW ENGLAND

JANUARY 2, 1929

A. A. Surgeon Judd Hammond. Relieved from duty at Marine Hospital, Chicago, Ill., and directed to proceed to New London, Conn., and report by wire to Commandant, U. S. Coast Guard, Washington, D. C., for duty. Dec 27, 1928.

Associate Sanitary Engineer Leonard Greenburg. Directed to proceed from New Haven, Conn., to Washington, D. C., and return, in connection with studies of ventilation. Dec. 29, 1928.

REPORTS AND NOTICES OF MEETINGS

THE MIDDLESEX EAST MEDICAL SOCIETY

A meeting of the Middlesex East District Medical Society was held on January 9 at Wakefield. Thirty members were present. Dr. J. W. Bartol and Mr. Frederic Kent were guests and spoke of the campaign and plans for the proposed new medical center. Dr. Eugene E. O'Neil then adressed the gathering, speaking on "The Coagulation Treatment of Varicose Veins".

ALLAN R. CUNNINGHAM, *Secretary.*

DR. POLL LECTURES TO THE YALE MEDICAL SOCIETY

Dr. Heinrich Poll, Director of the Anatomical Institute, Hamburg University, gave an illustrated lecture on "The Interrelationships between Adrenalin, Insulin, and Sexhormone," January 9, 1929. This lecture was given in the auditorium of the Sterling Hall of Medicine at Yale, and was delivered to the Yale Medical Society.

On a general biological background, Dr. Poll explained the relationships of the ductless glands, and the influence of their internal secretions upon each other. His deductions are based on experiments that he has carried out on mice.

In the first step of his proof he showed that the injection of insulin increases the amount of adrenalin secreted. The second link showed that the internal secretion of sexhormone governs the amount of adrenalin prepared in the so-called ganglion cervical uteri. For example, during pregnancy an increase in the quantity of adrenalin prepared in this ganglion is to be found. The third link in this triple linked chain is built by the fact that the more adrenalin injected or secreted, the more sexhormone is secreted.

Dr. Poll believes that this chain is connected with the functions of the other ductless glands of the body, and upon this he is now working. He maintains that if the activity of one of the ductless glands changes, the activity of all the others must follow. To use his own metaphor: "The ductless glands are in no way connected by paths or tracts, but in some such way as musical notes are related to produce melody".

On the following afternoon, Dr. Poll presented informally to the first year men the methods of instruction in anatomy which he uses at the University of Hamburg. He showed photographs and other slides on the screen which, added to his own graphic description of the procedure at Hamburg, made his talk clear and entertaining.

An outstanding feature of the anatomy instruction at Hamburg is the construction of plaster models of anatomical parts by the students. They model the bones, place muscles and ligaments on them, and work in the nerves and blood vessels in different colored plaster. All structures are made actual size with the exception of the components of the eye and ear. Contrary to supposition, not much time is spent upon this model making, yet the finished product is nearly perfect in its relations. The students spend one afternoon a week in the modelling room in comparison with five mornings a week in dissection.

PLYMOUTH COUNTY MEDICAL SOCIETY

The Plymouth County Medical Society will meet at the Brockton Hospital, Thursday, January 17, 1929, at 11 A. M.

PROGRAM

(1) Synopsis of report by Secretary of minutes of last meeting and of special meeting of the society.

(2) Report of chairman of legislative committee of conjoined meeting of legislators-elect to General Court of 1929 with the committee.

(3) Presentation of plans of the united campaign of the Boston Medical Library and the Massachusetts Medical Society by Dr. John Bartol and Mr. Frederick Kent, Campaign Director.

(4) Address by Michael F. Fallon, M.D., Surgeon-in-Chief, St. Vincent's Hospital, Worcester, Mass. Subject: "Endometrial Implant in the Umbilicus with Menstrual Reaction"; illustrative cases.

(5) Address by Edward J. Denning, M.D., Physician-in-Chief, Carney Hospital, Boston, Mass., and associate professor in the Theory and Practice of Medicine at Tufts College. Subject: "Influenza."

(6) Eulogy on Dr. Andrew L. MacMillan by Dr. Charles Hammond, Hanover.

(7) Dinner served by courtesy Brockton Hospital Executive Committee.

(8) Inspection of the Keith Memorial Children's Ward.

G. A. MOORE, M.D.,
Secretary Plymouth County Medical Society.

BOSTON MEDICAL HISTORY CLUB

The next meeting will be held at the Boston Medical Library, 8 Fenway, Monday, January 21, 1929, at 8.15 P. M.

Memorial of Dr. Charles G. Cumston. John W. Farlow, M.D.

Jenner's Home at Berkeley. Henry R. Viets, M.D. Illustrated with lantern slides. Postponed from November 19, 1928.

"The Long Lost Friend". James F. Ballard.

Light refreshments.

JAMES F. BALLARD, *Secretary.*

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held on the evening of January 22 at 8:15 P. M. in the Amphitheatre of the Peter Bent Brigham Hospital.

PROGRAM

1. Presentation of Cases.
2. Medical Fashion Show—Dr. Reginald Fitz.
3. Treatment of Post-Operative Massive Collapse of the Lung—Dr. Cornelius G. Dyke.

NEW ENGLAND WOMEN'S MEDICAL SOCIETY

The fifty-first annual meeting of the New England Women's Medical Society will be held at the Hotel Vendome on Thursday, January 24, 1929, at 6.45 P. M. Speakers will be:—M. Luise Diez, M.D., Director of Division of Hygiene, Massachusetts State Department of Public Health,—"Health Work." Annie J. Cannon, D.Sc., of Harvard College observatory,—"Experiences of a Woman Astronomer."

E. V. O'NEIL, M.D., *Secretary.*

THE NORFOLK DISTRICT MEDICAL SOCIETY

The January 29 meeting of the Norfolk District Medical Society will be held in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, Mass., at 8:15 p. m.

Subject: "The Treatment of Varicose Veins by the Injection Method", Dr. E. E. O'Neil.

Discussion by Dr. John Homans, Dr. A. R. Kimpton, Dr. R. B. Cattell.

FRANK S. CRUICKSHANK, M.D., *Secretary.*

THE TRUDEAU SOCIETY

The Annual Meeting of the Trudeau Society of Boston will be held on Tuesday evening, January 22, 1929, at 8:15 p. m., in Sprague Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr. Henry D. Chadwick of Westfield State Sanatorium; subject: "Pulmonary Tuberculosis of the Adult Type in Childhood and Adolescence."

Physicians, medical students and nurses are cordially invited to attend this meeting.

RANDALL CLIFFORD, *Secretary.*

LECTURE: PRINCIPLES AND RESULTS OF THE BRITISH SCHEME FOR COMBATTING VENEREAL DISEASES

HARVARD MEDICAL SCHOOL, JANUARY 30, 1929, AT 5 P. M.

Colonel L. W. Harrison, adviser to the British Ministry of Health on venereal diseases, lecturer on venereal diseases at St. Thomas' Hospital Medical School, London, and in charge of the model venereal diseases clinic at that hospital, will lecture at the Harvard Medical School, Building C amphitheatre, 240 Longwood Avenue, Boston, on Wednesday, January 30, 1929, at five o'clock, on the "Principles and Results of the British Scheme for Combatting Venereal Diseases." The lecture is open to all who are interested.

Colonel Harrison has had a long and distinguished career as an officer of the British Army, and during the War was in charge of the British Army venereal diseases hospitals in France. His research in the field of clinical medicine, especially as related to venereal diseases, has made him the leading authority in this field in Great Britain. Colonel Harrison has represented Great Britain at many international conferences where venereal diseases were scheduled for scientific discussion. In 1919, he represented Great Britain at the Cannes conference when representatives of the Red Cross Societies of the allied and associated powers met to develop a peace-time program for the League of Red Cross Societies; and, in 1921, he represented Great Britain at the original venereal diseases conference held under the auspices of the Red Cross Societies at Copenhagen, and has been one of the medical advisers of the Union Internationale contre le Peril Venerien at various conferences. Recently, he was one of a group of five experts appointed by the League of Nations' Health Section to study syphilis from a scientific medical point of view and to initiate certain researches into the clinical problems involved in the treatment of syphilis.

SOCIETY MEETINGS

Combined Meetings of the Boston Medical Library, the Suffolk District Medical Society, the Middlesex South District Medical Society and the Norfolk District Medical Society (at Boston Medical Library at 8:15)

January 30, 1929—General meeting in association with Boston Medical Library. "Heredity," Professor George H. Parker, Harvard University.

February 27, 1929—Medical Section. "The Newer Knowledge of Nutriment," Dr. Lafayette B. Mendel (exact title to be submitted later), Yale University Medical School.

March 27, 1929—Meeting in association with Middlesex South District Medical Society. Clinical and Experimental Studies of Obstructing Jaundice and Its Complications. Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

The medical profession is cordially invited to attend all these meetings.

January 17—Clinical Conference of the New England Hospital for Women and Children. Detailed notice appears on page 102, issue of January 10.

January 21—Boston Medical History Club. Detailed notice appears on page 156.

January 22—The Trudeau Society. Complete notice appears elsewhere on this page.

January 22—Harvard Medical Society. Detailed notice appears elsewhere on this page.

January 24—New England Women's Medical Society. Detailed notice appears elsewhere on this page.

January 29—Conference on Mental Hygiene in Public Health and Social Work. Detailed notice appears on page 1235, issue of December 13.

January 30—Harvard Medical School. Detailed notice appears elsewhere on this page under "Lecture."

DISTRICT MEDICAL SOCIETIES

Barnstable District Medical Society

Schedule of Meetings: February 7, 1929, May 2, 1929.

Bristol North District Medical Society

April 18, 1929—Spring meeting.

Essex North District Medical Society

May 1, 1929 (Wednesday)—Annual meeting at Lawrence, at 12:30 P. M.

May 2, 1929 (Thursday)—Censors meet at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. (Tel. 3430.)

Essex South District Medical Society

February 6, 1929 (Wednesday)—Council meeting, Boston.

February 13, 1929 (Wednesday)—Danvers State Hospital. Clinic at 4 P. M. Supper at 6 P. M. Speaker: Dr. Roger Lee, Boston; subject to be announced later. Discussion from the floor.

March 6, 1929 (Wednesday)—Lynn Hospital. Clinic at 5 P. M. Dinner at 7 P. M. Symposium on Pneumonia. Speakers: Dr. Reginald Fitz, Diagnosis. Dr. Fred Lord, Treatment. Dr. William H. Robie, Heart in Pneumonia. Discussion from the floor.

RALPH E. STONE, M.D., Secretary.

Franklin District Medical Society

Meetings will be held on the second Tuesday of March and May.

Hampden District Medical Society

The next meeting will be held January 22.

Hampshire District Medical Society

March 13, 1929—Address by Dr. George E. Gage, Professor of Bacteriology and Physiology at the Massachusetts State College.

Middlesex East District Medical Society

The following schedule of meetings has been arranged for the coming year:

March—Reading.
May—Melrose.

Subjects and speakers to be arranged by committees in each city or town.

Middlesex North Medical Society

The winter meeting will be held the last Wednesday in January.

The annual meeting will be held the last Wednesday in April.

Middlesex South District Medical Society

March 27, 1929—Joint meeting with the Suffolk and Norfolk Districts.

April, 1929—Annual meeting. Definite date to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District Medical Society for the 1928-29 Season. The schedule below will be adhered to as strictly as possible. The carrying out of the proposed plan will, of course, depend upon the acceptances of invitations extended to the speakers. Minor changes may be necessary.

January 29—Roxbury Masonic Temple. Subject, Treatment of Varicose Veins by the Injection Method—Dr. E. E. O'Neil. Dr. Homans will open the discussion. Complete notice appears on page 157.

February 25—Roxbury Masonic Temple. Dr. W. R. Ohler. Subject to be announced. Discussion to be opened by Dr. A. A. Hornor.

March 29 — Roxbury Masonic Temple. Subject and speakers to be announced.

May—Annual meeting program to be announced.

The Censors of the Society meet May 9, 1929, at the Roxbury Masonic Temple, Warren Street, Roxbury, at 4 P. M., for the examination of candidates.

Plymouth District Medical Society

January meeting, Thursday, January 17, 1929, at 11 A. M., Brockton Hospital, Brockton, Mass. See page 156 for detailed notice.

March meeting at the Moore Hospital, Brockton, Mass., March 21st, program to be announced later.

April meeting at the Commercial Club, Brockton, April 18th, at 6 P. M. Annual Oration by Dr. Ralph C. McLeod, Orator; dinner.

Suffolk District Medical Society

March 27, 1929—Meeting in association with Middlesex South District Medical Society. "Clinical and Experimental Studies of Obstructive Jaundice and Its Complications," Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

LINCOLN DAVIS, M.D., President.
ARTHUR H. CROSBIE, M.D., Secretary.

Worcester District Medical Society

February 13, 1929—Worcester State Hospital. Program to be announced.

March 13, 1929—Worcester City Hospital. Dedication of New Nurses' Home. Speaking program to be announced.

April 10, 1929—Grafton State Hospital. Program to be announced.

May 8, 1929—Annual meeting. Worcester Country Club.

Worcester North District Medical Society

January 22, 1929 (Tuesday)—At Henry Heywood Memorial Hospital, Gardner, by invitation. Program by Staff.

Annual meeting the fourth Tuesday in April.

BOOK REVIEW

Sterility in Women. SIDNEY FORSDIKE, M.D., B.S. (Lond.), F.R.C.S. (Eng. and Edin.) William Wood & Co., New York, 1928.

The book lacks originality but does nevertheless offer a reasonably fair discussion of the subject. It is the first book in English to cover the use of lipiodol in diagnosis, though the presentation is not as comprehensive as that already given by Béclère* in French. The chapter on classification is the weakest of the book; the chapters on treatment, however, are good. On the whole if one takes the book for what it was obviously intended to be—an expression of the views of one man on a most difficult subject—it will be found to have decided merit.

*L'Exploration Radiologique en Gynécologie, Claude Béclère. Masson et Cie. Paris. 1928.

BOOKS RECEIVED FOR REVIEW

Methods and Problems of Medical Education. Published by the Rockefeller Foundation. 263 Pages.

Old Masterpieces in Surgery. Edited by Alfred Brown. 263 Pages.

Chirurgie des Voies Biliaires. Edited by C. Sobre-Casas. Published by Masson et Cie, Editeurs. 119 Pages.

Le Diagnostic Dans Les Affections de la Colonne Vertebrale. Edited by P. Oudard, A. Hesnard, and H. Courcaud. Published by Masson et Cie, Editeurs. 257 Pages.

International Clinics. Edited by Henry W. Cattell and others. Vol. IV, 38th Series, 1928. Published by J. B. Lippincott. 312 Pages.

Child Health and Character. Edited by Elizabeth M. S. Chesser. Published by Oxford University Press. 204 Pages. Price $1.50.

Qualitative and Volumetric Analysis for Medical Students. Edited by H. Lambourne and J. A. Mitchell. Published by Oxford University Press. 64 Pages. Price $1.50.

A Handbook for the Diabetic. Edited by Albert H. Rowe. Published by Oxford University Press. 129 Pages. Price $2.50.

Treatment of Venereal Disease in General Practice. Edited by E. T. Burke. Published by Oxford University Press. 162 Pages. Price $1.75.

Methods of Biological Assay. Edited by J. H. Burn. Published by Oxford University Press. 126 Pages. Price $2.55.

Lipiodol in the Diagnosis of Thoracic Disease. Edited by Chandler and Wood. Published by Oxford University Press. 133 Pages. Price $3.50.

Tumors Arising from the Blood-vessels of the Brain. Edited by Harvey Cushing and Percival Bailey. Published by Charles C. Thomas. 219 Pages. Price $7.50.

Pediatrics for the General Practitioner. Edited by Harry M. McClanahan. Published by J. B. Lippincott Co. 606 Pages. Price $6.00.